

High Speed Rail Empire Corridor

Tier 1 Final Environmental Impact Statement Volume 1



Department of
Transportation



U.S. Department of Transportation
Federal Railroad Administration

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High Speed Rail Empire Corridor Program Tier 1 Final Environmental Impact Statement (EIS)

Pursuant to:

National Environmental Policy Act of 1969 (42 USC Section 4321 et seq.)
Federal Railroad Administration, Procedures for Considering Environmental Impacts (64 FR 28545 and 78 FR Part 2713); Section 4(f) of the U.S. Department of Transportation Act (49 USC 303) and implementing regulations (23 CFR Part 774); Federal Railroad Administration, Procedures for Considering Environmental Impacts (64 Federal Register 28545); National Historic Preservation Act (54 USC 306101 et seq.) and implementing regulations (36 CFR Part 800); Clean Air Act-as amended (42 USC 7401 et seq.) and implementing regulations (40 CFR Parts 51 and 93); the Endangered Species Act of 1973 (16 USC 1531-1544) and implementing regulations (50 CFR Part 402); Clean Water Act (33 USC 1251-1387) and implementing regulations (33 CFR Parts 320 to 324 and 40 CFR Part 230); and Section 6(f) of the Land and Water Conservation Fund Act (36 CFR Part 59).

New York State Environmental Quality Review Act (17 NYCRR Part 15)

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High Speed Rail Empire Corridor Program Tier 1 Final Environmental Impact Statement

This Tier 1 Final Environmental Impact Statement (EIS) consists of five volumes:

Volume 1 Environmental Impact Statement, which includes:

- Executive Summary
- Chapter 1, Introduction and Purpose and Need
- Chapter 2, Existing Transportation Conditions and Major Markets
- Chapter 3, Alternatives
- Chapter 4, Social, Economic, and Environmental Considerations
- Chapter 5, Financial Capacity
- Chapter 6, Comparison of Alternatives
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Track schematic (11"x17") plans of the Base Alternative and four Build Alternatives

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ES Executive Summary

ES-1. Introduction

The Federal Railroad Administration (FRA) and the New York State Department of Transportation (NYSDOT) have prepared a tiered Environmental Impact Statement (EIS) to evaluate proposed system improvements to intercity passenger rail services along the 464-mile Empire Corridor, connecting Pennsylvania (Penn) Station in New York City with Niagara Falls International Railway Station and Transportation Center in Niagara Falls, New York.

The Empire Corridor is one of eleven designated high-speed rail corridors nationwide, initially authorized under the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and supplemented by the Transportation Equity Act for the 21st Century of 1998 (TEA-21). In December 1998, the U.S. Secretary of Transportation announced the official designation of the TEA-21-authorized Empire Corridor as a high-speed rail corridor. On April 16, 2009, President Obama announced a Vision for High-Speed Rail in America and committed to funding this program through the federal American Recovery and Reinvestment Act of 2009 (ARRA). To achieve this vision, the FRA launched the High-Speed Intercity Passenger Rail (HSIPR) Program in 2009,¹ and Congress funded \$8 billion through ARRA. Congress continued to fund annual appropriations totaling \$2 billion for fiscal years 2009 and 2010,² using the framework developed by the Passenger Rail Investment and Improvement Act of 2008 (PRIIA).³ The Fixing America's Surface Transportation Act, or FAST Act, provided funding through 2020 and marked the first time intercity passenger rail programs were included in a comprehensive, multimodal surface transportation bill, authorizing \$6.7 billion over five years.⁴ The current plans for infrastructure funding by the federal government include funding for Amtrak and intercity passenger rail, to fund initiatives such as improved passenger rail service on the Empire Corridor.

The Tier 1 EIS has been developed in accordance with the National Environmental Policy Act of 1969 (NEPA) and its implementing regulations (40 Code of Federal Regulations [CFR] Parts 1500-1508); FRA's NEPA procedures (64 Federal Register [FR] 28545 and 78 FR Part 2713); and the New York State Environmental Quality Review Act (SEQR). NYSDOT, as the SEQR lead agency, has determined that NYSDOT's variance procedures for SEQR (17 New York Codes, Rules and Regulations [NYCRR] Part 15) apply.

FRA and NYSDOT are using a tiered process to complete the environmental review of the High Speed Rail Empire Corridor Program. "Tiering" is a staged environmental review process applied to environmental reviews for complex projects. This initial phase, the Tier 1 EIS, addresses broad corridor-level issues and sets forth a package of follow-on studies, proposals, and projects. The publication of the Tier 1 Draft EIS in the Federal Register, on January 31, 2014, was a major milestone in the tiered review process for this program. This Tier 1 Final EIS considers public and agency

¹ The HSIPR program is funded by the American Recovery and Reinvestment Act of 2009 (ARRA) (Public Law 111-5, 123 Stat. 115) and the Transportation, Housing and Urban Development and Related Agencies Appropriations Act for 2010 (Division A of the Consolidated Appropriations Act, 2010 (Pub. L. 111-117)).

² Additional funds under these original appropriations were redistributed again in 2011, after several states returned the grant monies.

³ The Passenger Rail Investment and Improvement Act of 2008 (PRIIA) (Division B, Title III of Public Law 110-432, 122 Stat. 4907 (October 16, 2008)) authorized the appropriation of funds to establish several new passenger rail grant programs, including capital investment grants to support intercity passenger rail service, high-speed corridor development, and congestion grants. FRA consolidated these and other closely related programs into the High-Speed Intercity Passenger Rail (HSIPR) Program.

⁴ FRA, "FAST Act: Overview," accessed June 25, 2017: <<https://www.fra.dot.gov/Page/P0919>>. The FAST Act did not provide additional funding for the High Speed Rail Empire Corridor Program.

comments received during the public comment period, which closed on April 30, 2014, and identifies a Preferred Alternative. The number and types of comments received during the public comment period, with broad-based support for introducing rail improvements that increase service and travel speeds, reflect the public interest in improvements in the Empire Corridor. Subsequent phases, or tiers, will analyze, at a greater level of detail, individual project improvements based on the decisions made in Tier 1. The Tier 2 NEPA process will include detailed analyses based on refined engineering designs and operational plans. It will identify site-specific environmental consequences, and develop site-specific mitigation measures for the Preferred Alternative. The program will be implemented as a package of separate improvement projects to be planned, designed, and constructed over the next 25 years, as outlined in the Service Development Plan.

The possibility of instituting high-speed rail along the Empire Corridor has been the focus of studies by NYSDOT and others for more than twenty years. Developments in recent years by FRA and NYSDOT/New York State have advanced rail planning and funding at both the federal and state levels, culminating in this Tier 1 Final EIS to evaluate high-speed passenger rail service along the Empire Corridor. Each alternative analyzed in this Tier 1 Final EIS contains the same set of enhancements for the Empire Corridor South (south of Albany/Rensselaer). Those enhancements were developed and agreed by the owners and operators of the Empire Corridor South and set forth in the Hudson Line Railroad Corridor Transportation Plan: Final Report (2005). For the Empire Corridor West (west of Albany/Rensselaer), this Tier 1 Final EIS analyzes new alternative sets of improvements and projects.

CSX Transportation, Inc. (CSXT), a private freight railroad company, owns more than half of the Empire Corridor (Exhibit 2-1). While recognizing the federal NEPA and New York state SEQR legal framework upon which the environmental review process must be based, this Tier 1 Final EIS has also been developed in consideration of two agreements between NYSDOT and CSXT (dated May 28, 2010), “Framework Agreement Concerning Certain Rights and Responsibilities with Respect to New York High Speed Rail” and “Agreement for Progressing a Tier 1 Environmental Impact Statement” (attached as Appendix J).

ES-2. Where is the High Speed Rail Empire Corridor Program?

The Empire Corridor connects the larger cities in New York State, extending north from New York City to Yonkers and Poughkeepsie, turning west at Albany to extend through Schenectady, Utica, Syracuse, Rochester, and Buffalo, and terminating at Niagara Falls. The Empire Corridor consists of three main sections: Empire Corridor South, Empire Corridor West, and Niagara Branch, as shown in Exhibit ES-1.

- **Empire Corridor South** begins at Penn Station in New York City and extends 142 miles along the east side of the Hudson River, from Manhattan (New York County) through the Bronx (Bronx County), Yonkers and Croton-Harmon (Westchester County), Poughkeepsie and Rhinecliff (Dutchess County), to Albany-Rensselaer Station (Rensselaer County).
- **Empire Corridor West** extends 294 miles west from Albany-Rensselaer Station to just east of the Buffalo-Exchange Street Station, passing through the Mohawk Valley from the Capital District cities of Albany (Albany County) and Schenectady (Schenectady County), through the central-western New York cities of Utica (Oneida County), Syracuse (Onondaga County), and Rochester (Monroe County) in the Finger Lakes District, and Buffalo (Erie County) on Lake Erie. Outside of these metropolitan areas, the railroad also passes through the more rural counties of

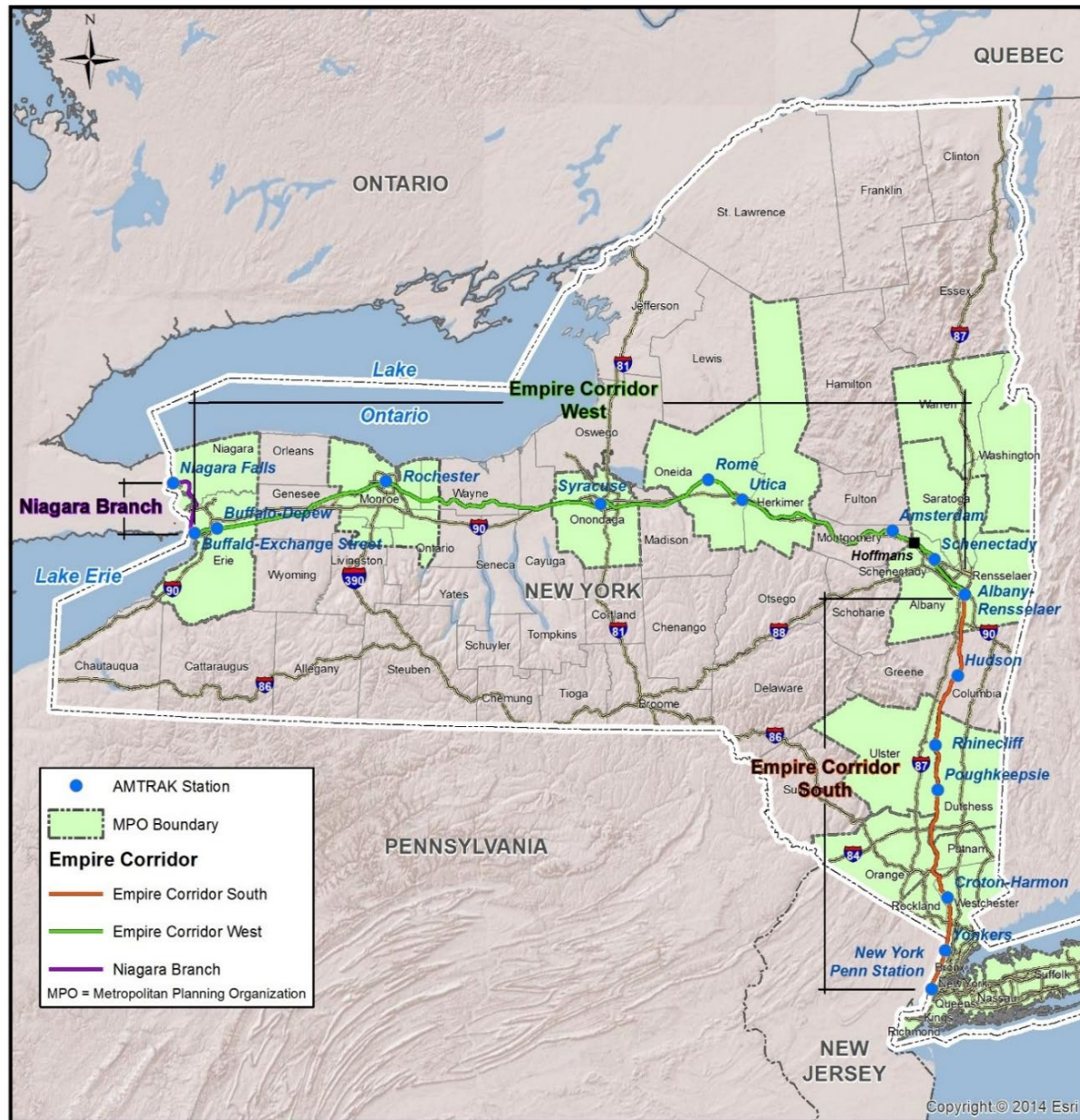


Exhibit ES-1—Program Location Map

Montgomery, Herkimer, Madison, Cayuga, Wayne, and Genesee.

- The **Niagara Branch** extends 28 miles west, from east of Buffalo-Exchange Street Station to Niagara Falls (Niagara County).

ES-2.1. What is the transportation corridor used for?

The existing Empire Corridor has been a vital transportation route of national significance for almost

200 years. The corridor developed along the historic “Water Level Route” that followed the canal system connecting Lake Erie and the Hudson River to transport goods and services to and from New York City. The Empire Corridor helped to establish New York City as an international trade center, connecting markets in Canada and the Midwest with Albany (providing connections to Montreal and Boston) and New York City. For many decades, the railroad was operated by the New York Central Railroad as a four-track mainline between Albany and Buffalo carrying passenger and freight trains on express and local tracks. As part of cost-saving measures that started in the late 1950s, tracks were removed, and the line exists today as a double track system through upstate New York (between Albany and Buffalo), where it is a heavily used shared-use corridor with freight, and continues as a single track on portions of the line extending north to Niagara Falls.

The Empire Corridor runs along the population and economic spine of the state, connecting all of New York State’s major metropolitan areas. The corridor is essential to New York for its ability to efficiently transport large numbers of passengers and goods annually that would otherwise be transported via highway and air travel corridors. It is distinguished by its diversity of ownership and the mix of passenger and freight usage, as the National Railroad Passenger Corporation’s (Amtrak’s) Empire Service shares trackage with CSXT and the Metropolitan Transportation Authority’s Metro-North Railroad (Metro-North).

Empire Corridor South is dominated by commuter travel and carries a much greater frequency of intercity passenger rail services and only a limited number of freight trains. The Metro-North, the second busiest commuter railroad in the United States based on ridership, operates the Hudson Line commuter rail service between Poughkeepsie and Grand Central Terminal, New York City (NYC), cross-town from Penn Station, NYC. In 2019, Metro-North operated between roughly 59 (weekend) and 85 (weekday) daily roundtrips along the Hudson Line. In 2019, Amtrak operated thirteen daily roundtrips (weekdays) along Empire Corridor South between Albany-Rensselaer and New York City, with eleven daily roundtrips on the weekends. In addition to Empire Service to Buffalo and points beyond (four daily roundtrips), this section of track also accommodates Amtrak service that extends north of Schenectady Station on the Canadian Pacific Railway to Montreal, Canada (Adirondack—one daily roundtrip) and Vermont (Ethan Allen Express—one daily roundtrip). There is also one daily connecting service from Albany-Rensselaer to Boston, Massachusetts.

Passenger service on Empire Corridor South has shared use of the tracks with limited freight operations of approximately four trains a day.

Empire Corridor West is a two-track line that is the busiest freight track in the state, carrying one of the highest volumes on the CSXT system nationwide. This is the only railroad crossing upstate/western New York that can accommodate the maximum freight rail car weight (315,000 pounds). The entire line west of Hoffmans (west of Albany) also has adequate clearance for double-stack intermodal trains. CSXT operates this as a high-volume railroad that is heavily used by 50 to 60 daily freight trains.

In 2019, Amtrak operated a total of four daily roundtrips along Empire Corridor West. Amtrak operates three daily round trips to Niagara Falls (Empire Service), with one continuing on to Toronto (Maple Leaf Service). The other daily service trip continues from Buffalo-Depew Station to Chicago (Lake Shore Limited). In addition to these four trips, two trips offer service to Schenectady, one on the Adirondack Service continuing to Montreal and one on the Ethan Allen Express continuing to Rutland, Vermont.

The **Niagara Branch** is primarily a passenger railroad, since there is a freight bypass route used by CSXT that provides modern clearances for freight service to Niagara Falls. Of the four daily westbound passenger trains operated by Amtrak along Empire Corridor West from Albany to Buffalo, three continue on to Niagara Falls.

ES-2.2. What is the purpose and need for the program?

The purpose of the High Speed Rail Empire Corridor Program is to introduce higher passenger train speeds on the Empire Corridor and to improve reliability, travel times, service frequency, and passenger amenities. By improving passenger rail service along the corridor, the High Speed Rail Empire Corridor Program will attract additional passengers, increase travel choices, and contribute to a balanced, multi-modal transportation system.

The need for the program is that existing Empire Corridor passenger rail service is negatively impacted by inadequate service levels, operational constraints (track conditions, alignment, and obsolete or inadequate track and signal systems), and delays resulting from pervasive conflicts with freight traffic. As a result, it is not viewed by travelers as a dependable, attractive transportation option, particularly to and from points west of Albany-Rensselaer. For example, the trip from Buffalo to New York City can be made in less than two hours by air and under seven hours by car, compared to approximately eight hours by the existing Empire Corridor passenger service provided by Amtrak.

Despite these constraints and service problems, ridership on the Empire Corridor had increased by 54 percent (561,881 passengers) over 17 years to 1.6 million passengers in 2019.⁵ Since 2001, ridership on the Buffalo to Albany portion of the corridor has more than doubled, at the same time freight and commuter rail volumes have grown. Projections through 2035 indicate that freight traffic will continue to increase, and forecasts for the Metro-North Hudson Line through 2022 also predict substantial increases. The Hudson Line ridership increased 50 percent over 25 years to reach 17.4 million passengers in 2019, an increase of 5.8 million passengers. Congestion is expected to only worsen as demand for intercity passenger, commuter, and freight rail services all continue to grow on these shared-track systems.

Despite the growth in ridership, there is still a need for the program. Existing and forecasted socioeconomic and transportation market conditions in the Empire Corridor indicate an opportunity for an improved Empire Corridor passenger rail service to further grow, offering a viable, alternative mode of intercity travel in the Empire Corridor.

The Empire Corridor West's connections to the Niagara region highlight its importance as a rail corridor for both freight and passenger rail. The Buffalo-Niagara Region is an important gateway to Canada for international trade. The four highway bridges and two rail bridges across the Niagara River comprised the second busiest commercial border crossing of the entire Canada-U.S. border.⁶

Existing inadequate infrastructure to support rail operations limits Empire Corridor service. Simulated existing passenger service along Empire Corridor West indicates that passenger train on-time performance (OTP) is less than 48 percent, with an average train speed of approximately 50 miles per hour (mph) and an average train lateness of almost 28 minutes.⁷ Simulated existing freight

⁵ This Tier 1 Final EIS describes 2019 rail ridership, OTP, and schedule as the latest available pre-pandemic condition. Ridership reported for the corridor excludes the ridership on the Lake Shore Limited, Adirondack, and Ethan Allen Express services.

⁶ Ontario Ministry of Transportation and NYSDOT, *Bi-National Transportation Strategy for the Niagara Frontier*, December 2005.

⁷ LTK Engineering Services. *Rail Network Operations Simulation Results*. Prepared for New York State Department of Transportation. June 2012. Network simulations for this Tier 1 EIS reflect the rail network along Empire Corridor West. *The Hudson Line Corridor Railroad Transportation Plan, 2005, includes rail operations network simulation results and proposed actions for Empire Corridor South.*

train performance along Empire Corridor West indicates over 38 train minutes of delay per 100 freight train miles operated, indicating congestion ahead, and a high variability in average freight train trip times, indicating service inconsistency.

For Amtrak's current rating of reliability on its routes, 80 percent on-time performance (OTP) is considered to be a "passing" grade. In 2019, Amtrak rated the Empire Service between New York and Albany as having 91 percent of on-time customers (where customers arrive within 15 minutes), but the full Empire Service operating between New York to Niagara Falls only operated with 66 percent of on-time customers (considered by Amtrak to be a failing grade). Of the other routes operating on Empire Corridor in 2019, only the Ethan Allen Express received a passing OTP (85 percent). The Adirondack had a 2019 customer OTP of 73 percent, and the Maple Leaf had an OTP of 67 percent.

Current passenger rail service is also infrequent relative to travel demand. For example, there is a strong travel market between New York City and Albany, and passenger rail captures only 11 percent of that travel market. In 2019, 13 weekday trips were available, with the earliest Albany arrival time of approximately 9:50 a.m.; this limited service does not accommodate business weekday schedules. Furthermore, although maximum authorized speeds (MAS) along portions of the Empire Corridor are 79 mph on the Buffalo to Hoffmans (west of Albany) segment and 110 mph on the Hoffmans to New York City segment (refer to Figure ES-1), actual operating speeds along much of the rail corridor are considerably lower due to track conditions, alignment, and obsolete or inadequate track and signal systems which constrain capacity and speed.

ES-2.3. What are the goals and objectives of the program?

NYSDOT proposes to undertake the High Speed Rail Empire Corridor Program to improve intercity passenger service in New York State through infrastructure investments and operational improvements, which will enhance the attractiveness of the service to existing and potential riders, increase the market share of intercity passenger rail, and contribute to an overall balanced transportation network. Improvements in service include tangible and measurable gains in operational reliability and travel time reductions of scheduled train trips; an increase in the frequency of train trips; and support of economic development, mobility, and environmental sustainability goals.

NYSDOT has identified the following performance objectives for the High Speed Rail Empire Corridor Program as measurable objectives that directly relate to the program purpose and need to reduce infrastructure constraints to accommodate existing and projected demand:

- Improve system-wide on-time performance (OTP) to at least 90 percent;
- Reduce travel time along all segments of the Empire Corridor;
- Increase the frequency of service (number of daily round trips) along Empire Corridor West beyond the existing four daily round trips;
- Attract additional passengers;
- Reduce automobile trips, thereby reducing highway congestion;
- Minimize interference with freight rail operations.

These six performance objectives are used to evaluate and rank the high-speed rail alternatives developed for the High Speed Rail Empire Corridor Program. The environmental impacts and costs

of these alternatives are also considered, as presented in this Tier 1 Final EIS, and were an important factor in selecting the Preferred Alternative.

In addition, NYSDOT identified the following transportation-related goals for the program:

- Increase travel choices and improve quality of life by providing additional commuting and travel options for residents and workers;
- Contribute to economic revitalization by accommodating forecasted growth in population and employment and corridor rail freight operations and by accommodating and attracting additional tourists;
- Improve environmental quality by facilitating rail use and reducing reliance on automobile travel, thereby reducing fuel use and greenhouse gas (GHG) emissions.

ES-2.4. Why is this EIS being conducted?

The purpose of this Tier 1 EIS is to address broad, corridor-level issues associated with higher speed passenger rail service along the Empire Corridor and to set forth a package of follow-on (Tier 2) studies, proposals, and projects. The Tier 1 EIS evaluates a range of alternatives to meet the program needs of reducing infrastructure constraints and accommodating existing and projected demand in the Empire Corridor. It identifies broad-based operational changes and investments in infrastructure and rolling stock (locomotives and passenger coaches) necessary to achieve the performance objectives, and estimates the capital and operating costs of the different alternatives. As a result of the Tier 1 EIS, FRA and NYSDOT selected an alternative which best meets the program needs, in consultation with the Empire Project Advisory Committee, other agencies, and the public.

This Tier 1 EIS accomplishes the following:

- Defines the purpose and need for the proposed action including performance objectives (Chapter 1);
- Documents the need for the proposed action by analyzing existing conditions (Chapter 2 and Appendices B, D, and E);
- Develops criteria and screens alternatives to eliminate those that do not meet the purpose and need of the proposed action (Appendix C) (Chapter 3);
- Identifies the range of reasonable alternatives to be considered, consistent with the current and planned use of the corridor, existing services within and adjacent to the program area, and other planned improvements (Chapter 3);
- Identifies the general alignments and right-of-way requirements of the reasonable alternatives (Chapter 3);
- Identifies the travel times, service schedule, frequencies, and stations serviced for the reasonable alternatives (Chapter 3);

- Identifies environmental constraints and considerations and performs high-level environmental review and analysis of conceptual alternatives under consideration⁸ (Chapter 4);
- Identifies the infrastructure and equipment investment requirements for each of the reasonable alternatives (Chapter 5);
- Establishes the timing and sequencing of individual capital improvements to implement the proposed action (Chapter 5);
- Evaluates the alternatives according to the program purpose and need and impact upon existing freight service, and compares the likely environmental impacts among alternatives (Chapter 6);
- Documents the public outreach and agency coordination process used to solicit input on the alternatives (Chapter 7);
- Responds to agency and public comments received in public hearings and written comments received (Appendix K).

This Tier 1 Final EIS identifies a Preferred Alternative for the High Speed Rail Empire Corridor Program consisting of required individual capital improvements needed to achieve the program. For the program of improvements selected in this Tier 1 process, the follow-on Tier 2 NEPA documents will then explore in greater detail the component projects of the Preferred Alternative. The Tier 2 NEPA process will include detailed analyses based on refined engineering designs and operational plans. It will identify site-specific environmental consequences, and develop site-specific mitigation measures for the Preferred Alternative. Input from the public and from reviewing agencies, which had been sought during the preparation and publication of the Tier 1 Draft EIS, will continue to be solicited during the Tier 2 NEPA process.

ES-3. Alternatives Considered

ES-3.1. Initial Alternatives Considered

FRA and NYSDOT considered alternatives relative to maximum passenger train speeds, service frequencies, and physical improvement projects and selected Alternative 90B as the Preferred Alternative. Initially, alternatives were developed according to FRA's definitions of high-speed rail and intercity passenger rail service, labeled as **Emerging** (speeds up to 90 mph), **Regional** (between 90 and 125 mph), and **Core Express** (speeds between 125 and 250 mph). NYSDOT developed an initial range of possible alternatives within the framework of these categories that were grouped according to six maximum authorized speed groups. The six maximum authorized speed groups for the alternatives development consisted of:

- **79 mph**, current track standards/in cab signaling capacity–**Base, 79A, 79B, 79C Alternatives**;
- **90 mph**, next step up in track standards/in cab signaling train control–**Alternatives 90A/90B**;
- **110 mph**, another step up in track standards–**Alternative 110**;
- **125 mph**, the first speed threshold for electrically powered trains – **Alternative 125**;
- **160 mph**, the practical upper limit of electrified dynamic tilt trains, such as Acela; and
- **220 mph**, the practical upper limit of high speed rail operations.

⁸ Appendix G provides more details on the Tier 1 environmental inventory and impact assessment for the Base and other Build Alternatives considered.

In addition to applying FRA's high-speed rail service levels, alternatives development also included an evaluation of service frequency, equipment requirements, and previously-identified and potential physical improvements to enhance service. The ten initial alternatives were then screened according to the program purpose and need and associated performance goals and objectives. Applying a consistent set of performance measures based on the program purpose and need and a comparative assessment of the alternatives, certain alternatives were not advanced. These included the lower-speed 79 mph maximum authorized speed alternatives, and the Very High Speed (VHS) alternatives (160 mph, 220 mph). The 79 mph alternatives were rejected as not providing enough mobility benefit – in terms of speed and travel times – compared to the similar cost 90 mph alternatives. The VHS alternatives were rejected for their extremely high cost – nearly triple the next most costly alternative – the likelihood of significant community and environmental impacts, and significant engineering design difficulties necessary to create a sufficiently straight track alignment to permit these speeds. These considerations are discussed more thoroughly in Section 3.2.2. The options retained for further evaluation are discussed in the next section.

ES-3.2. Alternatives Advanced

Five alternatives, including the Base Alternative and four Build Alternatives, were advanced for further study in the Tier 1 EIS. The Build Alternatives consist of Alternatives 90A, 90B, and 110, located along the existing Empire Corridor, and Alternative 125, which continues existing service on the existing tracks while adding a new, segregated high-speed right-of-way reserved exclusively for passenger trains and paralleling the existing alignment, as shown in Exhibit ES-2.

The following paragraphs describe the five High Speed Rail Empire Corridor Program alternatives. For each, there are a series of capital improvements aimed at improving switching and signalization to increase track capacity, straightening vertical and horizontal curves to permit higher speed, adding passing tracks and/or a fully segregated third track reserved for passenger use, and reducing the number of vehicular grade crossings to meet FRA requirements for higher-speed operation.

In each case, a suite of capital improvements identified in the *Hudson Line Railroad Corridor Transportation Plan* (2005)⁹ are included for the Empire Corridor South segment, common to all four Build Alternatives. These improvements are:

- Add second track between MPs 9 to 13 (including Spuyten-Duyvil Movable Bridge);
- Add new Tarrytown pocket track to support Metro-North turnbacks without delaying Empire Corridor Service;
- Add new signal system between Croton-Harmon to Poughkeepsie Stations (MPs 32.8 to 75) for additional operating capacity;
- Add third track (MPs 53 to 63) to support Empire Corridor overtakes of Metro-North trains;
- Add new track/siding at Poughkeepsie Station Track 3 to support higher operating speeds for Empire Corridor and Metro-North service;
- Add new Poughkeepsie Yard to eliminate station congestion and crossing conflicts north and south of the station;

⁹ Available at: https://www.dot.ny.gov/content/delivery/Main-Projects/S93751-Home/S93751--Repository/HudsonLineTransportationPlan_Final_Report_2005.pdf.

- Add new Control Point (CP) 82, new CP 99, new CP 136 two-track universal interlockings to support enhanced reliability during maintenance activities;
- Reconfigure Hudson Station to support simultaneous passenger boarding/alighting on both main tracks.

The Albany-Rensselaer Station Fourth-Track Capacity improvements were also included in the Hudson Line Transportation Plan and were completed. These improvements are included with the Base Alternative analysis.



Exhibit ES-2—Corridor Map of the Build Alternatives

ES-3.2.1. Base Alternative

NEPA/SEQR regulations require analysis of the Base Alternative, often referred to as the No-Action or No-Build Alternative. This analysis is carried through the Tier 1 EIS to evaluate the cost and impacts of the program Build Alternatives in relation to the benefits gained by the public. The Base Alternative represents a continuation of existing Amtrak service with those operational and service

improvements already programmed or constructed. At the time the Tier 1 Draft EIS was prepared, eight rail improvement projects that were planned and funded under FRA HSIPR and TIGER grants to address previously identified capacity constraints comprised the Base Alternative. Since publication of the Tier 1 Draft EIS, all of these projects have been completed.

Train frequency would remain unchanged from the existing frequency. The Base Alternative would maintain the existing 13 round trips per day between New York Penn Station and Albany-Rensselaer Station and the four round trips per day between Albany-Rensselaer Station and Buffalo, with three trips continuing to Niagara Falls. The majority of the work would occur within the existing right-of-way (ROW). Train trips would continue to operate at the existing maximum speed of 79 mph. The average running speed would be 51 mph. Despite projected increases in ridership, train frequency in the Base Alternative would remain unchanged from the existing frequency, and there would be no additional train sets added to the existing inventory. In 2035, 1.6 million riders are projected for the Base Alternative.

The capital cost of the Base Alternative, at the time the Tier 1 Draft EIS was prepared, was estimated to be \$310 million for the eight projects proposed. The annual operations and maintenance (O&M) cost would be \$106 million. With annual revenue estimated at \$79 million, the annual deficit would be \$27 million. The Base Alternative's estimated operating ratio, or the percent of O&M costs covered by revenue, would be 75 percent, the worst of all the alternatives. The estimated annual subsidy per rider for the Base Alternative would be approximately \$17.

ES-3.2.2. Alternative 90A

Alternative 90A would add capacity and station improvements through twenty separate, capital improvement projects. Improvements for Alternative 90A would include 64 miles of new mainline track; and upgrades to 17 grade crossings/warning systems, 74 undergrade bridges, and six stations/facilities. As noted in Section ES-3.2, these improvements include elements originally proposed along Empire Corridor South as part of the Hudson Line Transportation Plan. Trains would operate at 90 mph maximum authorized speed between Schenectady and Buffalo Exchange Street, and would continue to operate at existing speeds between Penn Station, NYC and Schenectady and between Buffalo Exchange Street and Niagara Falls. The average running speed in Alternative 90A would increase to 57 mph, 12 percent faster than in the Base Alternative.

Alternative 90A would add three daily round trips between New York City and Albany, for a total of 16 round trips; and it would add four daily round trips between Albany and Niagara Falls, for a total of eight round trips to Buffalo, with seven continuing to Niagara Falls. Schedule enhancements would include express service from New York City to western New York, with station stops in Albany-Rensselaer, Syracuse, Rochester, Buffalo-Depew, Buffalo-Exchange Street, and Niagara Falls. Six train sets would be added. Alternative 90A is projected to increase annual ridership to 2.3 million passengers in 2035. This would be a gain of 700,000 passengers above the ridership projected in 2035 for the Base Alternative.

The capital cost of Alternative 90A is estimated to be \$1.72 billion. The annual O&M cost would be \$160 million. With annual revenue estimated at \$122 million, the annual deficit would be \$38 million. Alternative 90A's estimated operating cost ratio would be 76 percent, slightly higher (better) than that of the Base Alternative. The estimated annual subsidy per rider for Alternative 90A would be the highest of the Build Alternatives, but would be slightly lower than that of the Base Alternative, at approximately \$17.

ES-3.2.3. Alternative 90B—Preferred Alternative

As described in Section ES-5 of this Executive Summary and in Chapter 6 of this Tier 1 Final EIS, Alternative 90B has been identified as the Preferred Alternative. The installation of approximately 370 miles of trackage, including additional third and fourth tracks, under Alternative 90B would add capacity and provide the ability to route passenger trains around freight trains even while passenger trains operate at higher speeds. Alternative 90B would include the improvement projects proposed under Alternative 90A. Alternative 90B would add a dedicated third main passenger track for approximately 273 miles between Schenectady and Buffalo-Depew stations. It would also add a fourth passenger track over a combined distance of approximately 39 miles in five separate locations. The third main passenger track would be located 15 feet from the existing mainline, and would generally occupy the portion of the existing railroad bed that historically contained two additional tracks. The fourth track would be located 15 feet north of the dedicated third track and have been designated with a maximum authorized speed of 90 mph. Alternative 90B improvements again include those Empire Corridor South Hudson Line Transportation Plan elements common among all of the Build Alternatives, as noted in Section ES-3.2 of this Executive Summary.

Additional infrastructure specific to Alternative 90B would include:

- A new signal system to support the 90 mph maximum authorized speed,
- Bridge modifications,
- Grade crossing modifications,
- Culvert extensions,
- Station improvements, and
- Three grade separated flyovers to carry passenger track passes over the existing freight tracks.

Because it would use dedicated passenger-only tracks, Alternative 90B would have fewer speed restrictions than would Alternative 90A. Under Alternative 90B, several areas along Empire Corridor West would require larger track shifts to obtain an increase in operating speeds due to the existing geometry of the track. Trains would operate at 90 mph maximum authorized speed between Albany and Buffalo and Niagara Falls. The average running speed in Alternative 90B would increase to 61 mph, 17 percent faster than the average speed of the Base Alternative, and approximately 7 percent faster than the average speed of Alternative 90A.

Like Alternative 90A, Alternative 90B would add four daily round trips between Albany and Niagara Falls for a total of eight daily round trips to Buffalo. Alternative 90B would add an additional round trip between NYC and Albany over Alternative 90A, for a total of 17 round trips along Empire Corridor South. Similar to Alternative 90A, six train sets would be added to increase the frequency of passenger rail service. Unlike Alternative 90A, there would be no express service in Alternative 90B, due to its proposed operating plan. Alternative 90B is projected to increase ridership to 2.6 million passengers in 2035. This would be a gain of approximately 300,000 passengers above projected ridership for Alternative 90A and a gain of approximately 1 million passengers above projected ridership for the Base Alternative.

The capital cost of Alternative 90B is estimated to be \$5.97 billion. The annual O&M cost would be \$176 million. With annual revenue estimated at \$143 million, the annual deficit would be \$33 million. Alternative 90B's estimated operating ratio would be 81 percent, higher (better) than both the Base Alternative and Alternative 90A. The estimated annual subsidy per rider for Alternative 90B would be approximately \$13, which is about 25 percent less than that of the Base Alternative.

ES-3.2.4. Alternative 110

Alternative 110 would include the improvement projects proposed under Alternative 90A and would construct new third and fourth main tracks to support the 110 mph maximum authorized speed. Alternative 110 would add approximately 384 miles of additional trackage, but the location of the new tracks 30 feet from the existing tracks (or 15 feet further than Alternative 90B) would result in considerably greater property impacts than the Preferred Alternative. It would add a dedicated third main passenger track over 273 miles between Schenectady and Buffalo-Depew stations. It would also add a fourth passenger track over 59 miles in six locations. The third main passenger track would be located generally 30 feet from the existing mainline and occupying a portion of the existing railroad bed that historically contained two additional tracks. Due to existing physical conditions that would make it impractical to achieve the 30-foot separation, there would be sections of third main track located 15 feet from the existing track. In these instances, the maximum authorized speed would be reduced to 90mph. The fourth track would be located between the dedicated third track and the existing track using 15-foot track centers, with a designated maximum authorized speed of 90 mph. Alternative 110 improvements again include those Empire Corridor South Hudson Line Transportation Plan elements common among all of the Build Alternatives, noted in Section ES-3.2 of this Executive Summary.

Additional infrastructure specific to Alternative 110 would include:

- A new signal system to support the 110 mph maximum authorized speed,
- Bridge modifications,
- Grade crossing modifications,
- Culvert extensions,
- Station improvements, and
- Two grade separated flyovers to carry the third main passenger track over freight tracks.

Alternative 110 would provide two grade-separated flyovers. West of Rochester, the dedicated third passenger track would run over the existing Track 2 alignment, and the existing freight tracks would be relocated to the north to maintain the desired track centers. This configuration would also eliminate an expensive grade separated flyover.

The average running speed in Alternative 110 would increase to 63 mph, more than 21 percent faster than that of the Base Alternative, and approximately 3 percent faster than Alternative 90B's average speed.

Alternative 110 would add the same number of trips along the Empire Corridor as proposed for Alternative 90B. Like Alternative 90B, Alternative 110 would add four daily round trips between Albany and Niagara Falls, for a total of eight daily round trips to Buffalo, and would add four daily round trips along Empire Corridor South, for a total of 17 round trips. Due to its proposed operating plan, Alternative 110 would not offer express service. Six train sets would be added to increase the frequency of passenger rail service. Alternative 110 is projected to increase ridership to 2.8 million passengers in 2035. This would be a gain of approximately 1.2 million passengers above projected ridership for the Base Alternative and an increase of 200,000 passengers over the projected ridership for Alternative 90B.

The capital cost of Alternative 110 is estimated to be \$6.69 billion. The annual O&M cost would be \$178 million. With annual revenue estimated at \$153 million, the annual deficit would be \$25 million,

the lowest of all alternatives. Alternative 110's estimated operating ratio would be 86 percent, the highest (best) of all alternatives. The estimated annual subsidy per rider for Alternative 110 would be approximately \$9, which is the lowest of all alternatives, and approximately 30 percent less than Alternative 90B, the second lowest alternative. Alternative 110 also would have the lowest annualized O&M cost per rider of all the alternatives.

ES-3.2.5. Alternative 125

Alternative 125 would include improvements for Alternative 90A along Empire Corridor South and the Niagara Branch. Alternative 125 would include station improvements at Syracuse and Rochester Stations proposed under the Base Alternative. Alternative 125 would continue the current Amtrak service on the existing right-of-way ("Legacy Service").

To achieve the highest speed among the alternatives, however, Alternative 125 would also add a new electrified (with overhead catenary), two-track, grade-separated high-speed rail corridor of 283 miles between Albany/Rensselaer Station and a new Buffalo-Exchange Street Station. Within the densely-developed areas around Albany, Syracuse, Rochester, and Buffalo, the new corridor would roughly parallel the existing corridor on a combination of new and existing ROW to provide express high-speed service to existing stations in these cities. To achieve the grade separation, it is assumed that a certain amount of elevated sections would be required in these urban areas. Where Alternative 125 extends through Rensselaer and Albany counties along the New York State Thruway and through the downtown areas of Syracuse, Rochester, and Buffalo (approaching Buffalo Exchange Street Station), the tracks would be elevated and Alternative 125 would directly service the existing stations serving these cities. The remainder of the track would be largely at grade through primarily rural or undeveloped lands, and no new stations along the new alignment sections are proposed.

Required infrastructure would include roadbed, track, viaducts and bridges, cuts and embankments, access roads, railroad systems, maintenance facilities, and other support facilities. The express high-speed service would operate at an average speed of 77 mph, an increase of 51 percent over the Base Alternative and an increase of approximately 22 percent over Alternative 110. This does not account for the slower existing Amtrak service that would be retained on the existing right-of-way. The weighted average speed of both services would be 63 mph. Amsterdam, Schenectady, Rome, Utica, and Niagara Falls passengers (accounting for a small percentage of Empire Corridor passengers) would not receive high-speed dedicated service directly, but would have to transfer at either Albany, Syracuse, Rochester or a new Buffalo station to access the faster train service. For the Empire Corridor West new two-track right-of-way between Albany and Buffalo alone (without consideration of the other, slower services that augment the new 125 mph maximum authorized speed tracks), the Alternative 125 service would operate at an average speed of 108 mph.

Alternative 125 would provide a total of 19 daily round trips between Albany, Buffalo, of which six would continue on to Niagara Falls. This compares to the existing four daily round trips to Buffalo, of which three continue to Niagara Falls. Four daily round trips would be retained on the existing corridor and 15 daily high-speed express round trips would be added on the new corridor. All of the trips on the new corridor would be express service, with station stops at Albany/Rensselaer, Syracuse, Rochester, and Buffalo. Alternative 125 would add 17 dual mode locomotives to increase the frequency of passenger rail service. Alternative 125 is projected to increase ridership to 4.3 million passengers in the year 2035, more than a 50 percent increase over the projected ridership for Alternative 110 and a 169 percent increase over the Base Alternative.

The capital cost of Alternative 125 is estimated to be \$15.74 billion. The annual O&M cost would be \$312 million. With annual revenue estimated at \$252 million, the annual deficit would be \$60 million, the highest of all alternatives. Alternative 125's estimated operating ratio would be 81 percent, the same as that of Alternative 90B. The estimated annual subsidy per rider for Alternative 125 would be approximately \$14, which is about 8 percent more than that of Alternative 90B, the second lowest alternative. Alternative 125 would have the highest annualized O&M cost per rider of all the alternatives.

ES-4. How do the alternatives compare?

Exhibit ES-3 presents a graphical comparison of the five alternatives. Exhibit ES-4 presents a tabular summary of service levels, ridership, and costs for the Base and Build Alternatives.

ES-5. Selection of the Preferred Alternative—Alternative 90B

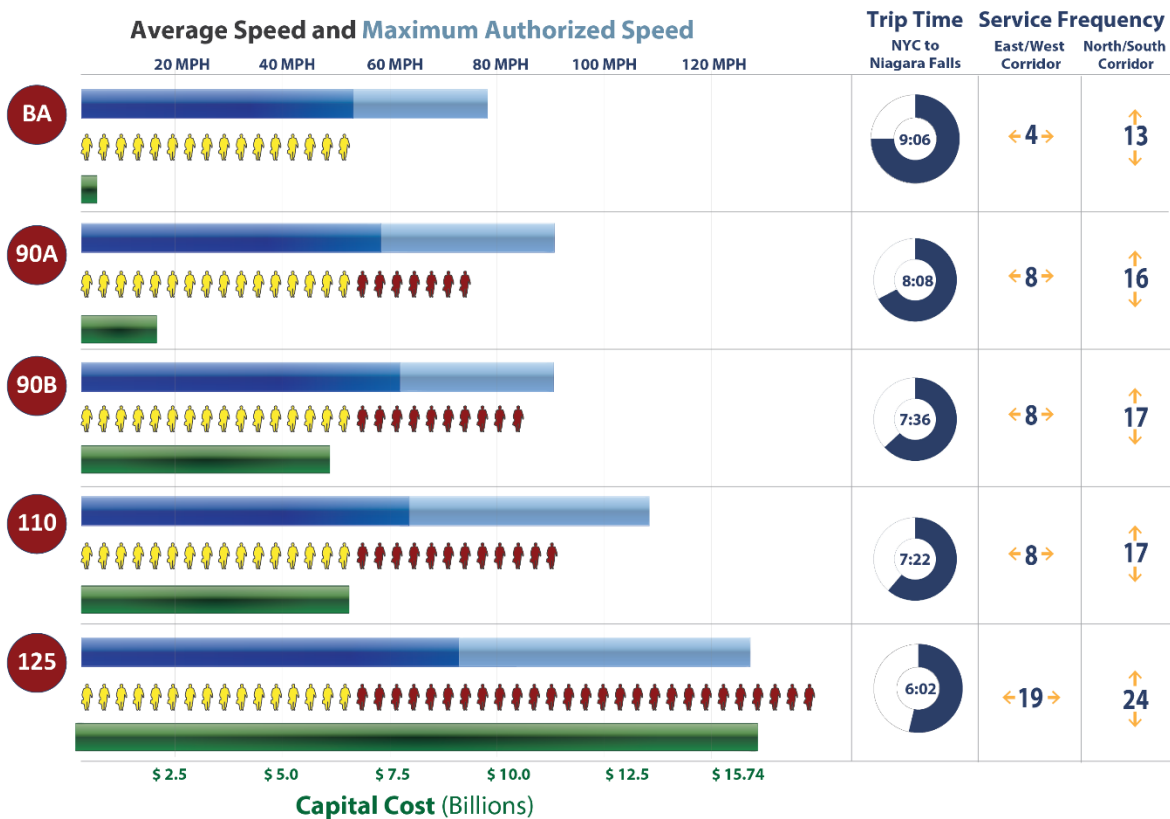
NYSDOT and FRA selected Alternative 90B as the Preferred Alternative. The installation of additional third and fourth tracks under Alternative 90B would add capacity and provide the ability to route passenger trains around freight trains even while passenger trains operate at higher speeds. Alternative 90B, would have an average speed that would be 10 mph faster than the Base Alternative between New York City and Niagara Falls and would result in a 1½ hour savings in travel time. Alternative 90B would result in the best on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of the alternatives considered. Alternative 90B would also result in one of the lowest trip times for freight between Selkirk Yard, outside Albany, and Buffalo. The subsidy for the Preferred Alternative, Alternative 90B, would be \$13 per rider, which would be lower than both Alternative 125's subsidy per rider of \$14 and the Base and 90A Alternatives' subsidy per rider of \$17 per rider.

Exhibit ES-4 presents a comparative analysis of service levels, ridership, and costs of the alternatives. Exhibit ES-5, and Exhibit ES-6 summarize the effectiveness of the alternatives in meeting the program's performance objectives using the qualitative rating system.

The selection of Alternative 90B as the Preferred Alternative considered the ability of each alternative to meet nine program performance objectives and transportation-related goals. The performance goals and transportation-related objectives were balanced against costs and environmental impacts and also considered the comments received on the Tier 1 Draft EIS, as discussed in Chapters 6 and 7.

Moreover, Alternative 90B would have fewer environmental impacts than Alternatives 110 and 125. Alternative 90B would have land use impacts in nine areas in six counties, compared to 53 areas in eight counties with Alternative 110 and two to three thousand acres of impact with Alternative 125. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Because of the required property acquisition, Alternative 110 has significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance.

Exhibit ES-3—Comparison of Alternatives



Note: Travel time between NYC and Niagara Falls presented in hours: minutes, based on express service, westbound scheduled times. For Alternative 125, average speed for regional service would be 53 mph, and travel time would be 8:40.

The Base Alternative and Alternative 90A, while minimizing both costs and environmental impacts, do not meet project performance goals and objectives to the extent that the other Build Alternatives do. These alternatives also have the poorest operating ratios (75%-76%) and cost-effectiveness of the alternatives considered.

Alternative 125 would attract the most passengers (4.3 million by 2035) and would perform the best in terms of travel times and frequency for the express service only (serving New York City, Albany-Rensselaer, Syracuse, Rochester, and Buffalo). However, it would be the costliest and would have much larger property and environmental impacts. It would also relegate travelers from Schenectady, Amsterdam, Utica, and Rome to the use of the existing regional train service on the existing corridor.

Exhibit ES-4—Comparative Analysis of Alternatives

Evaluation Criteria	Alternatives				
	Base	90A	90B Preferred Alternative	110	125
Service Levels (In round-trips/day)					
Frequency of Service NYC to Albany	13	16	17	17	24
Frequency of Service Albany to Buffalo	4	8	8	8	15 (express) 4 (regional)
Frequency of Service Albany to Niagara Falls	3	7	7	7	6
Average Speed NYC to Niagara Falls (mph)	51	57	61	63	77 (express) 53 (regional)
Travel Time: (hrs.:min.) NYC to Niagara Falls	9:06	8:08	7:36	7:22	6:02 (express) 8:40 (regional)
Time Savings: Compared to Base Alternative (hrs.: min.)	-	0:58	1:30	1:44	3:04 (express) 0:26 (regional)
On-Time Performance	83.0%	92.4%	95.4%	94.9%	100% (express) 83.0% (regional)
Ridership (Annual One Way)					
Total (2035)	1.6 million	2.3 million	2.6 million	2.8 million	4.3 million
Increase as Compared to Base Alternative	-	0.7 million (44%)	1.0 million (63%)	1.2 million (75%)	2.7 million (169%)
Costs¹					
Capital Costs (Billions)	\$0.310	\$1.72	\$5.97	\$6.69	\$15.74
O&M Costs, Annual (Millions)	\$106	\$160	\$176	\$178	\$312
Revenue, Annual (Millions)	\$79	\$122	\$143	\$153	\$252
Total [Deficit]/Surplus (Millions)	[\$27]	[\$38]	[\$33]	[\$25]	[\$60]
Operating Ratio (percent O&M costs covered by revenue)*	75%	76%	81%	86%	81%
Cost Effectiveness (Annualized O&M Cost per Rider)	\$66.26	\$69.57	\$67.69	\$63.57	\$72.56
[Subsidy]/Surplus per Rider (rounded)	[\$17]	[\$17]	[\$13]	[\$9]	[\$14]

¹ Capital Costs are in 2017 dollars

* Operating Ratio is the annual revenue as a percentage of the operating and maintenance costs. For Alternative 90B, the Preferred Alternative, this would be \$143 million/\$176 million = 81 %.

Exhibit ES-5—Effectiveness of Alternatives in Meeting Performance Objectives

Performance Objectives	Base	90A	90B – Preferred Alt.	110	125 ¹	
Improve System-Wide On-Time Performance	X	★	★	★	★ (Express)	X (Regional)
Reduce Travel Time	–	+	+	+	★ (Express)	+ (Regional)
Increase Service Frequency	X	+	+	+	★ (Express)	+ (Regional)
Attract Ridership	–	★	★	★	★	
Reduce Automobile Trips	–	+	+	+	★	
Minimize Impact on Freight Rail Service	–	–	+	+	–	

Notes: ¹ Performance on the new express service and the legacy regional service will differ, due to improvements along Empire Corridor South and the Niagara Branch.

Rating System: ★ Strongly supports program goals and objectives; + Supports program goals and objectives; - Neutral regarding program goals or objectives; X Contrary to program goals or objectives

The Alternative 125 express service would provide significant improvements in travel time (3 hours in travel time savings between New York City and Niagara Falls) over the Base Alternative in 2035, but would not directly service the stations at Schenectady, Amsterdam, Utica, and Rome or Niagara Falls. For Alternative 125, the New York-Niagara Falls legacy regional service (serving all intermediate stations, including Schenectady, Amsterdam, Utica, and Rome) would experience only modest improvements in travel time over the Base Alternative, due to improvements along Empire Corridor South and the Niagara Branch. Travelers from New York using legacy service to non-express-stop cities would experience somewhat shorter travel times (about 13 minutes faster) than those available under the Base Alternative. Moreover, because of limited train slots over Metro-North south of Poughkeepsie and schedule constraints on the Amtrak Empire Connector between Spuyten Duyvil and New York City (on which both the high-speed and regional services would operate), there would be little value in transferring between regional and high-speed services at Albany-Rensselaer, Syracuse, Rochester or Buffalo. Therefore, the benefits of Alternative 125 would not be enjoyed by Schenectady, Amsterdam, Utica, and Rome passengers (even with a transfer), while the other Build Alternatives would confer benefits on all corridor rail riders.

Alternative 125 is the costliest alternative, at \$15.74 billion (in 2017 dollars), it would cost more than twice as much as the next most costly alternative (Alternative 110). Alternative 125 would also take the longest time to confer travel benefits, due to the time required to assemble, acquire, and construct a new right-of-way. Other alternatives begin conferring benefits within 2 to 5 years of the start of construction, with benefits continually increasing as additional improvements – signals, track, switches, grade crossings, and separations, bridges – are introduced in succeeding construction phases. Two to three thousand acres of land would be needed to construct a sealed high-speed rail corridor between Albany and Buffalo, affecting properties, farms, wetlands, and, potentially, tribal lands (none of the other alternatives have the potential to affect tribal lands).

While Alternative 110 would improve frequencies, travel times, and attract more passengers than Alternative 90B, the differences are relatively minor. Alternative 110 is projected to attract 2.8 million passengers in 2035, or 200,000 more passengers than Alternative 90B. This would be a gain of approximately 1.2 million passengers above projected ridership for the Base Alternative for Alternative 110. When considering cost, however, at \$6.69 billion (in 2017 dollars), the capital cost of Alternative 110 would be 12 percent, or \$720 million, higher than Alternative 90B. Because of the required property acquisition, Alternative 110 has significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance.

Considering all the factors described in this chapter, Alternative 90B best meets the program purpose and need and best balances the program's benefits and effects. Therefore, Alternative 90B is selected as the Preferred Alternative. Alternative 90B would attract 2.6 million riders annually by 2035, a gain of 1 million passengers over the Base Alternative. Alternative 90B would cost \$5.97 billion (in 2017 dollars).

This selection of the Preferred Alternative also considered public and agency inputs. There were 1,754 comments received from 932 commenters during the public comment period for the Tier 1 Draft EIS. There was broad support for a rail improvement program within the Empire Corridor, with the overwhelming majority of commenters (83%) voicing their support. While federal agency comments focused on technical aspects of the program, the majority of elected officials, state, regional, local agencies, and tribes supported improvements to high-speed rail within the Empire Corridor. Approximately 95 percent of businesses and organizations and 80 percent of individuals supported the program improvements. Individuals and organizations tended to favor the higher speed alternatives (Alternatives 110 and 125), over the other Build Alternatives. Comments from private railroads, including CSX Transportation, the owner/operator of portions of the right-of-way (particularly Empire Corridor West); shippers; and companies relying on freight rail expressed concerns that the program might adversely impact freight operations. The railroads, shippers, and businesses reliant on freight therefore favored the Base Alternative. The selection of Alternative 90B balances the preferences of these different constituencies.

ES-6. Potential Benefits and Environmental Impacts

This Tier 1 EIS identifies a broad, corridor-level overview of potential benefits and environmental impacts of the five program alternatives. Evaluations are based on conceptual designs and Geographic Information System (GIS) and file-based resource mapping, suitable for making corridor-wide, service-level decisions for the Empire Corridor. The quantitative extent of impacts of the Preferred Alternative, Alternative 90B, will be determined during Tier 2 evaluations and NEPA documentation, as specific projects, e.g., bridges, grade crossings, signal and track improvements, are advanced through design.

Exhibit ES-6 compares the potential impacts of the alternatives using a relative rating system to distinguish the lowest (designated L) to highest (designated H) impact potential among the alternatives. A summary of the findings for all the social, cultural and natural resource categories is discussed in Chapter 4.

Each alternative would affect the societal, cultural and natural environment differently. The Base Alternative would have the lowest potential for impact. Alternative 90A, consisting of 20 projects conducted largely within existing rights-of-way, would also be expected to have minimal impacts. Alternative 90B, the Preferred Alternative, would involve work extending outside of the right-of-way,

and impacts would be even greater for Alternative 110, with track construction extending further outside of the right-of-way. Overall, Alternative 125 has the highest potential for impact of all the alternatives, with construction of a new segregated corridor and sections of elevated tracks where the railroad would extend over the existing Empire Corridor. If Alternative 125 had been selected for further consideration, design in Tier 2 would need to consider ways to further avoid and minimize impacts associated with this alternative.

A brief overview of the environmental impacts of the alternatives is provided in the following section. Chapter 4 provides an environmental overview and comparison of the alternatives and details the social, cultural, and natural resource impacts of the Preferred Alternative, Alternative 90B. Appendix G provides more details on the environmental inventory and the social, cultural, and natural resource impacts of the other Build Alternatives. Exhibit 6-13 provides a more detailed summary on impacts of each alternative on each environmental resource category.

Exhibit ES-6—Comparison of Alternatives in Selected Impact Areas

Alternative/ Impact Area	Base	90A	90B – Preferred Alt.	110	125
Socioeconomic/ Land Use	L	L	M	M	H
Community	L	L	L	M	H
Historic	L	M	H	H	M ¹
Parks	L	L	L	M	H
Visual	L	L	M	M	H
Farmland	L	L	M	M	H
Waterbodies	L	M	M	M	H
Floodplains	L	L	M	M	H
Wetlands	L	L	M	M	H
Wildlife	L	L	M	M	H
Air Quality	L	B	B	B	B
Energy/ Greenhouse Gas	L	B-L	B-L	B-M	B-H
Noise/Vibration	L	M	M	M	H

L Potential for adverse effect is lowest among the alternatives

M Potential for adverse effect is moderate among the alternatives

H Potential for adverse effect is highest among the alternatives

B Long-term beneficial impact

¹ The undeveloped nature of the 125 Study Area may contribute to the lack of documented historic resources.

- **Socioeconomic Benefits:** The introduction of high-speed rail improvements is expected to generate considerable economic benefits as a result of improved passenger rail and freight operations. Major new infrastructure investments, such as improvements to high-speed rail service, could potentially change the population and employment outlook. For example,

according to a U.S. Conference of Mayor's Report, which examined the impact of high-speed rail upon the City of Albany, the introduction of high-speed rail along the corridor can contribute substantially to economic growth by driving higher-density, mixed-use development at train stations; expanding visitor markets and generating additional spending; broadening regional labor markets; and supporting the growth of technology clusters.¹⁰ This effect would be more pronounced with Alternative 125, but substantial economic benefits would also accrue under Alternative 110 and the Preferred Alternative, Alternative 90B.

The additional tracks segregating freight and passenger service will not only accrue economic benefits from increased ridership, but will also benefit freight rail and movement of goods. Empire Corridor West represents one of CSXT's highest volume freight routes nationwide. The economic benefits associated with the project will extend to freight rail users and shipping companies, and the additional tracks will result in faster travel times and less delays for freight. This major freight corridor connects to the border crossing at Niagara Falls, an economically important gateway for international trade.

- **Land Use Impacts:** Alternative 125 would require the assembly and acquisition of public and private lands along the 280-mile Albany-to-Buffalo corridor. An estimated two to three thousand acres of land would be needed. Notwithstanding efforts to minimize adverse effects, the construction of an essentially sealed corridor with limited opportunities for crossings could be expected to have an impact on community cohesion and large-scale land uses which may be bisected by the high-speed rail corridor. By comparison, property acquisition requirements of the other alternatives that follow the existing Empire Corridor would be considerably less than that for Alternative 125. Alternative 110 would involve the next greatest property displacements, affecting approximately 53 areas in 8 counties. Property displacements with the Base and Alternative 90A are anticipated to be minimal.

The Preferred Alternative, Alternative 90B, would affect approximately 9 areas in 6 counties. Most of the land uses affected consist of agricultural, industrial, or wooded, undeveloped property, with limited residential or building impacts. The work may require relocation of Route 5 in Montgomery County, which could involve property impacts, and the addition of maintenance service roads could also involve property takings.

Indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable (e.g., growth inducing effects related to changes in the pattern of land use, and population density or growth rate). Of the alternatives evaluated, the Base and 90A Alternatives would involve the least indirect, growth-inducing impacts. Alternatives 110 and 125 would involve the greatest indirect impacts, with larger transportation benefits, and a greater degree of secondary development impacts. The Preferred Alternative would involve growth-inducing indirect impacts that would be greater than the Base and 90A Alternatives but would be more moderate than Alternatives 110 and 125.

- **Environmental Justice/Title VI Impacts:** The program of improvements under any of the alternatives is unlikely to result in disproportionately high and adverse impacts to minority and low-income communities, as well as populations protected under Title VI (Limited English Proficiency populations, disabled, and elderly).¹¹ Unlike the Base Alternative, all the Build Alternatives would provide increased transit options that would provide a benefit for the minority, low-income, and other disadvantaged communities. Alternative 90A and Alternative

¹⁰ Economic Development Research Group, Inc. *The Economic Impact of High Speed Rail on Cities and their Metropolitan Areas*. Prepared for the U.S. Conference of Mayors (undated), released June 2010.

¹¹ Due to the size of the program area, the identification of EJ/Title VI populations was performed at the county level, as well as identifying disadvantaged communities at the city level in the largest major metropolitan areas along the program area.

90B, the Preferred Alternative, require less displacements and property impacts compared to Alternatives 110 and 125. Therefore, Alternatives 110 and 125 have a greater potential for impacts on disadvantaged populations. The Tier 2 analysis will include a more detailed and refined evaluation of the environmental justice/Title VI impacts of the Preferred Alternative (Alternative 90B).

- **Community and Public Facility Impacts:** Alternative 125 has the potential to affect 13 community/publicly used facilities (including cemeteries, privately owned golf courses/golf clubs, and a school ballfield) in 8 counties largely where it extends on new right-of-way. If Alternative 125 had been advanced, additional location analyses would need to consider ways to avoid or minimize impacts on these publicly accessible facilities. By comparison, Alternative 110 is projected to have potential effects on 4 community facilities (e.g., fire stations, post office) in 1 county.

The Preferred Alternative, and Alternative 90A, are not expected to have any direct impacts to community facilities. Alternative 90B would not incur direct impact on community facilities, although the proposed work will adjoin several sites, including minor league baseball stadiums in Syracuse and Rochester, a college and state offices in Schenectady, and a cemetery in Schenectady County. Increased frequency of service could have the potential to incur additional visual and noise impacts from train passbys, however the additional trips represent a minimal increase over current rail traffic that includes frequent CSXT freight rail traffic. Relocations of adjoining roadways may indirectly affect community facilities (e.g., through property acquisition or changes in access), and would be better defined in Tier 2 including measures to avoid or minimize any adverse effects.

- **Historic and Archaeological Resource Impacts/Section 4(f) Uses:** As part of the Tier 1 corridor-level screening, the historic impact assessment defined Areas of Potential Effects as the area extending 100 feet from the track centerline for direct effects, to encompass all locations where project construction could occur, and 600 feet for indirect effects. The APE is defined as: *"the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties."* Based on the defined Tier 1 APEs, Alternative 90B (the Preferred Alternative) could impact a greater number of identified archaeological/historic architectural resources compared to the Base Alternative, and Alternatives 90A and 125 (including NHLs, S/NR/listed and eligible individual resources and districts). Alternative 90B (the Preferred Alternative) could involve direct effects on approximately 153 to 154 archaeological/historic architectural resources, and indirect effects on an additional approximately 149 architectural resources due to construction-related activities. Notably, there are several rail bridges located within the right-of-way, which could be adversely affected by work proposed for this alternative. There could be additional adverse impacts to architectural resources because of the property acquisitions proposed for Alternative 90B.

Impacts for Alternative 110 would be roughly comparable to that for the Preferred Alternative, which would indirectly or directly affect 302 archaeological and architectural resources. However, Alternative 110 would likely involve greater impacts, with the location of proposed tracks 15 feet further than Alternative 90B. Alternative 90A is likely to have moderate effects, with 48 resources in the direct APE and an additional 52 resources within the indirect APE.

Alternative 125 would largely maintain elevated tracks within the existing ROW where it overlaps with the existing Empire Corridor, potentially affecting viewsheds that contain historic properties. Alternative 125 would therefore involve greater impacts than the Base or 90A Alternatives, potentially affecting 86 resources within the direct APE and an additional 36

resources within the indirect APE, depending on the footprint for the elevated structures that would carry the grade-separated tracks over the existing tracks. Alternative 125 would be developed along new right-of-way generally away from population centers where most historic structures are found. Due to the undeveloped nature of the areas bisected by Alternative 125, historic and archaeological resources may not be fully documented for these areas. Alternative 125 would also have the greatest potential interaction with and use of tribal land.

- **Parks and Recreational Facilities Impacts/Section 4(f) Uses:** Alternative 125 has the greatest potential effect on parks and recreational facilities, with 10 such facilities in 6 counties potentially affected (including an Oneida Nation-owned golf course). If Alternative 125 had been advanced, the additional location analyses in Tier 2 would need to avoid or minimize impacts on these facilities to the extent practicable. The Base Alternative, Alternative 90A, and Alternative 90B (the Preferred Alternative) would have minimal impacts to parklands. These alternatives would largely involve work within the right-of-way, with tracks being added in the location of the former track beds or existing access roads. With the possible exception of two crossings of the Mohawk River and Erie Canal for Alternatives 90B (the Preferred Alternative) and 110, only Alternative 110 would have any other potential effect on recreational facilities, potentially affecting one county park.

The Preferred Alternative will involve adding tracks at two crossings over the Erie Canal. In Schenectady, trackwork would cross over the Mohawk River/Erie Canal on an existing bridge near a riverfront park and bike trail, but impacts to these recreational uses are not anticipated. The addition of additional tracks around Rochester Station will cross the Erie Canal and Erie Canalway Heritage Trail, but are not anticipated to directly affect parklands. The potential for impacts at the canal crossings will be evaluated as designs are advanced in the Tier 2 assessments.

- **Visual Impacts:** Alternative 125 would have the greatest potential for adverse visual impacts. Alternative 125 would create a new 100-foot-wide railroad right-of-way that would be electrified (with overhead catenary) in what are today largely open undeveloped and moderately developed areas. Alternative 125 would also create an elevated structure in densely populated urban centers (Syracuse, Rochester, and Buffalo), which would be more visible than the at-grade railroad. Alternative 90A would be entirely confined to the existing railroad right-of-way, and is expected to have no such effects. Both Alternative 90B (the Preferred Alternative) and Alternative 110 would involve track construction extending outside of the right-of-way, which could result in additional clearing and property displacements, but which would otherwise result in minor visual effects.

Alternative 90B would involve minor visual changes as a result of the proposed addition of railroad tracks. This alternative would add new station buildings at Amsterdam and Buffalo-Depew stations, which could be expected to improve the appearance of these stations. Portions of Route 5, a scenic byway, would need to be relocated, but this would be relatively minor in nature. Three new flyovers would be added, which would be more visible, but these would be located at least several hundred feet from the nearest residences in either rural agricultural, lightly forested, or industrialized areas.

- **Farmlands Impacts:** Alternative 125 would have the most disruptive impact on farmland, potentially bisecting and isolating sections of prime farmlands and “farmlands of statewide significance” in 12 counties. By comparison, Alternative 110 would affect prime farmlands soils

in at least 4 counties, and Alternative 90B (the Preferred Alternative) would affect prime farmland soils in at least 3 counties. Alternative 90A has only minor effects on farmland, potentially affecting agricultural districts in only 1 county. The Base Alternative would not affect prime farmland.

The Preferred Alternative, Alternative 90B, would have minimal impacts to actively-farmed areas and little or no impacts to active farms. The proposed work will include the addition of track, as well as maintenance service roads in selected areas, which may affect areas of mapped prime farmland soils and has the potential for minor encroachments on two areas within Agricultural Districts and actively farmed fields in Herkimer and Genesee counties.

- **Impacts on Waterbodies/Rivers:** Alternative 125 would have the greatest potential for impacts on waterbodies, potentially affecting 361 such resources along Empire Corridor West. The Base Alternative would have the least potential for impact on surface water resources—the Tier 1 Draft EIS documented 68 crossings¹² potentially affected by the construction of eight component projects. The other alternatives are anticipated to have moderate potential for impact relative to the other alternatives, with between 107 and 219 surface water crossings potentially affected by Alternative 90A, Alternative 90B (the Preferred Alternative), and Alternative 110, respectively. Although Alternatives 90B and 110 would cross a similar number of waterway crossings, Alternative 110 is expected to involve greater impacts due to its location 15 feet further from the existing railroad than the Preferred Alternative (for a total of 30 feet of separation).
- **Wetlands and Floodplains Impacts:** Alternative 125 would have the greatest potential for impact on wetlands, relative to the other alternatives, with 513 new wetland crossings. Alternative 90B (the Preferred Alternative) and Alternative 110 would have a moderate potential for impact, potentially affecting 454 to 473 wetland crossings. Alternative 90A would have a relatively minor potential for impact, potentially affecting 54 wetland crossings, and the Tier 1 Draft EIS documented, for the Base Alternative, proximity to 84 wetland crossings potentially impacted by the construction of eight component projects. Both the 110 and 125 Alternatives would involve greater potential for floodplain encroachments than the Preferred Alternative, which would have the potential for encroachments in 11 counties. The Base Alternative would involve minimal potential for impacts, and Alternative 90A would also have a lower potential for impacts, potentially affecting floodplains in 7 counties.
- **Coastal Resources Impacts:** The coastal zone and coastal resources with the potential to be impacted are the same for all alternatives: Hudson River, Great Lakes/Irondequoit Bay and Creek, and Lake Erie/Niagara River. All the Build Alternatives will involve bridgework in coastal areas along both Empire Corridor South and all but Alternative 90A will involve bridgework in coastal resources along Empire Corridor West.

The Empire Corridor crosses through 11 Significant Coastal Fish and Wildlife Habitats (SCFWHs) and 6 Scenic Areas of Statewide Significance (SASSs) in this area. Proposed work for the Base Alternative, Alternative 90A, and Alternative 90B within or adjoining these SCFWHs and SASSs along this corridor would not involve substantial impacts outside of the right-of-way and would not result in appreciable changes in visual quality, and no impacts to the scenic qualities of the SASSs are anticipated. The impacts of the other Build Alternatives are comparable to that of the Preferred Alternative.

¹² The Tier 1 Draft EIS analyzed the potential impacts of the eight component projects, which have since been completed. The results of this assessment are presented to provide a basis of comparison with the Build Alternatives.

- **Ecology and Wildlife Impacts:** Alternative 125 would have the potential to impact the greatest number protected resources/species, potentially affecting 87 federally or state-listed species, 92 significant natural communities, six bird conservation areas, two National Natural Landmarks (NNLs), and Essential Fish Habitat (EFH). Alternative 90B (the Preferred Alternative) and Alternative 110 would have a moderate potential for impact, potentially affecting more than 7 and 21 locations, respectively, but substantially fewer of these resources than Alternatives 125. The 90/110 Study Area includes 72 listed species, 69 significant natural communities, six bird conservation areas, three NNLs, and EFH. Alternative 90A would have a relatively minor potential for impact, potentially impacting two locations, as well as EFH. The Base Alternative has the least potential for impact.
- **Air Quality Impacts:** Alternative 125 has the greatest potential benefit to air quality in some regions of the corridor (due to having the highest potential auto diversions), while it has the potential to adversely affect air quality in other regions of the corridor (the differences between the areas are a consequence of the distribution of on-road versus rail trips). The other alternatives would result in negligible changes in regional emissions, with the Base Alternative serving as the basis for comparison. While increased rail emissions would not adversely affect local air quality, some very minor local benefits may occur near roadways where trips are reduced. Some increases in pollutant concentrations may occur near rail stations, as rail riders access stations by auto and bus, increasing as ridership increases from Alternative 90A to 90B, 110, and 125.

Alternative 90B (the Preferred Alternative) would result in a small net air quality benefit on a regional scale, with a reduction in all pollutants other than NO_x.¹³ The Preferred Alternative would result in a net reduction in 61 tons per year of carbon monoxide in the New York-Northern New Jersey-Long Island non-attainment area and 44 tons a year in the Syracuse area.

- **Energy and Greenhouse Gases Impacts:** The program would have beneficial impacts for energy use and greenhouse gas (GHG) emissions from permanently reduced annual on-road energy use and emissions as auto and bus riders switch to more energy-efficient and less polluting rail. This assessment compared these savings to energy and GHG emissions from construction. Alternative 125 is likely to require the greatest quantity of energy and materials for construction. Thus, it has the greatest potential to adversely affect net energy and greenhouse gases. Other alternatives have lesser adverse initial energy and emissions impacts in proportion to their lesser construction emissions impacts. The long-term impact of the alternatives on energy and emissions is ultimately always positive, as the on-road benefits persist year after year and eventually offset the initial construction impacts.

Alternative 90B (the Preferred Alternative) would result in a reduction of approximately 33,000 metric tons per year of greenhouse gas emissions.

- **Noise/Vibration Impacts:** The program would increase the number of Amtrak trains by 8 trains (or 4 roundtrips) on Empire Corridor South (along which Metro-North operates 50 to 77 roundtrips daily) or 6 to 8 trains (or 3 to 4 roundtrips) on Empire Corridor West (along which CSXT operates 50 to 60 daily roundtrips). Due primarily to noise from these other sources, under all alternatives, including the Base Alternative, potential noise impacts along the Empire Corridor/Niagara Branch are expected to be moderate to severe in more urbanized areas,

¹³ Even this increase in NO_x would be lower than the *de minimis* levels in the conformity regulations.

between New York City and Schenectady, between Syracuse and Rochester, and between Buffalo and Niagara Falls. Alternative 125 has the potential for noise impacts in areas where no railroads currently operate. In this respect, it is the only alternative to introduce railroad noise in areas that are not already experiencing it. Noise impacts are also predicted along the three new alignment segments of Alternative 125. There is also a potential for vibration impacts along new corridor segments for Alternative 125.

The Preferred Alternative will not increase noise levels over the Base Alternative between New York City and Schenectady, and the increases west of this point would be imperceptible (0 to 2 decibels).

- **Contaminated and Hazardous Materials Impacts:** The Base Alternative and Alternative 90A would incur the least amount of potential impacts, with risks primarily associated with the presence of contamination within the existing railroad right-of-way and nearby sites. Alternative 90B (the Preferred Alternative) and Alternative 110 would have a greater potential to encounter contaminated materials than the Base and 90A Alternatives, especially where new third and fourth track subsurface work would occur within highly developed urbanized areas. However, the Preferred Alternative would involve substantially less work extending outside of the right-of-way and less property acquisitions than Alternatives 110 or Alternative 125. Alternative 125 would incur the greatest risk of impacts as work includes all the improvements considered under Alternative 90A, as well as the extension of 236 miles of new track and alignment through rural, suburban, and urban areas. The new rail alignment would require numerous property acquisitions, increasing the potential for encountering contamination.

ES-7. How will impacts be mitigated?

The final decision on the Preferred Alternative presented in this Tier 1 Final EIS will also be articulated in a Record of Decision that the FRA and NYSDOT will issue. On a broad, corridor-level basis, the Tier 1 EIS discusses strategies to mitigate potential impacts. These strategies will be further delineated during the Tier 2 analyses. The Tier 2 assessments will include thorough inventories of resources, as appropriate, to determine effects, and refinements in design of the component projects of the Preferred Alternative, Alternative 90B, to avoid and minimize environmental impacts. Impacts that cannot be avoided will be mitigated to the greatest extent practicable.

Mitigation strategies presented in Chapter 4 of this Tier 1 EIS will be further defined during Tier 2 evaluations. Tier 2 also will include ongoing discussions with federal and state authorities, regional and local governments, and the public to mitigate potential impacts. As needed, federal, state and local permits and approvals, which will require best management practices and site-specific mitigation design and post-construction monitoring, will be obtained during final design.

ES-8. How was the public involved in the Tier 1 EIS process?

ES-8.1. Tier 1 Draft EIS Publication and Public Hearings

NYSDOT and FRA selected the Preferred Alternative following extensive public involvement and agency coordination following the Tier 1 Draft EIS publication. Publication of the Tier 1 Draft EIS included mailing notifications to the project mailing list, including regulatory agencies, federal, state, local, and elected officials, stakeholders, and the public. Legal notices announcing the availability of

the Tier 1 Draft EIS and advertising the public hearing schedule were published in 11 newspapers. The Tier 1 Draft EIS was made available in 24 repositories/libraries in study area counties. Public comments were also solicited through the project website (<https://www.dot.ny.gov/empire-corridor>), in addition to the public hearings and meetings. Opportunities for public comment included oral and written comments solicited during six public hearings held across the state during the public comment period. The public comment period, originally scheduled to close on March 24, 2014, was extended to April 30, 2014, during which time three additional public informational meetings were held.

ES-8.2. Public Outreach Program and Agency Coordination

The selection of the Preferred Alternative and the alternatives analysis performed for the Tier 1 Final EIS incorporated inputs from the public, agencies, and stakeholders. The program's multifaceted public involvement program used a variety of media to engage and inform the public and other key stakeholders. A Public Involvement Plan (PIP) was developed to identify key contacts within targeted audiences, such as government agencies and organizations, public officials, interest groups, civic and business groups, present and potential riders/users, the media, and the general public. In addition, the PIP identified NEPA cooperating and participating agencies that were invited to participate in the program.

The High Speed Rail Empire Corridor Program has solicited early and continuous feedback from the public and from federal, state, regional, and local agencies and stakeholders. The program has encouraged open discussion of program details and issues and provided opportunities for comments and questions. Public outreach has included:

- Public scoping meetings and open houses,
- Stakeholder coordination and periodic mailings,
- Newsletters and informational materials disseminated at key points during the program development process,
- Media outreach, and
- Program website.

The newsletters provided information on the project scoping and project overview, the alternatives development and screening process, and identified the alternatives being advanced for detailed evaluation. Program newsletters were uploaded to the program website at www.dot.ny.gov/empire-corridor/ and were distributed to all contacts listed in the stakeholder mailing list. The stakeholder database is comprised of over 500 participants representing a variety of businesses, and governmental and non-governmental organizations.

At the onset of the program, appropriate federal, state, regional and local agencies were identified as having a role and/or interest in the program. NYSDOT and FRA submitted more than 34 formal letters of invitation to NEPA cooperating and/or participating agencies. The roles and responsibilities of cooperating and/or participating agencies are established under the environmental review provisions of SEQR and CEQ regulations (40 CFR 1508.5).

NYSDOT formed a project advisory committee, the Empire Project Advisory Committee (EPAC) to assist NYSDOT and FRA in progressing the environmental process. Additionally, two of the program's key partners, Amtrak and CSXT, were briefed on the status of the alternatives development phase of the program. Amtrak and CSXT have been involved in the High Speed Rail Empire Corridor Program as it proceeded through the Tier 1 EIS process and will continue to be involved in the Tier 2

evaluations. Agency coordination has also included, and will continue to include, consultations with federally recognized tribes and consulting parties pursuant to the National Historic Preservation Act.

ES-9. How will the program be financed?

Transportation infrastructure and services are typically supported by a combination of capital and operating funding from various sources. For the High Speed Rail Empire Corridor Program, capital funds would be provided primarily by FRA, the Federal Transit Administration (FTA), Federal Highway Administration (FHWA), NYSDOT and, where station upgrades are incorporated into the program, municipal governments and regional transportation authorities.

It is anticipated that FRA funding would be provided under the High-Speed Intercity Passenger Rail Program (HSIPR). For projects to be eligible for FRA funds, they must be advanced through the FRA's process. This Tier 1 Final EIS satisfies FRA's procedural requirements, including documentation required under NEPA.

During Tier 2, financial analysis will be refined for the Preferred Alternative, as cost and revenue estimates are improved and as more detailed engineering and cash flow modeling are performed. As individual projects are advanced and costs are refined, the specific projects of the Preferred Alternative will be incorporated into the state's transportation program for funding.

ES-10. What is the program schedule?

The program's Service Development Plan outlines the schedule for implementation of the Preferred Alternative. All of the projects listed under the Base Alternative have been completed, with other improvements in design and construction. The specific designs of the component projects of the Preferred Alternative will be better defined in Tier 2 design and environmental analysis. Benefits for the Preferred Alternative will accrue as individual projects are completed, and will start to be implemented within the next two to five years. The projects will be phased in over 5-year increments, with the program completed in 25 years from start of construction.

ES-11. Who can I contact for more information?

For more information on this Tier 1 EIS and the High Speed Rail Empire Corridor Program, please contact:

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1. Introduction and Purpose and Need

1.1. Introduction

The Council on Environmental Quality regulations that implement the National Environmental Policy Act (NEPA) of 1969 require that an Environmental Impact Statement (EIS) “*briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action.*”¹ This chapter presents the Purpose and Need Statement for the High Speed Rail Empire Corridor Program (the program), including a detailed assessment of the needs that the program addresses.

The Federal Railroad Administration (FRA) and the New York State Department of Transportation (NYSDOT) prepared a tiered Environmental Impact Statement (EIS) to evaluate proposed system improvements to intercity passenger rail services along the 464-mile Empire Corridor, connecting Pennsylvania (Penn) Station in New York City with Niagara Falls Station in Niagara Falls, New York (refer to Exhibit 1-1). This Tier 1 Final EIS presents the final High Speed Rail Empire Corridor Program selected by FRA and NYSDOT from the broad range of alternatives presented in the Tier 1 Draft EIS.

Key federal legislation relevant to the development of high-speed passenger rail service on the Empire Corridor includes:

- **The Transportation Equity Act for the 21st Century (TEA-21) (PL 105-178, June 9, 1998)**, supplemented the nationwide list of five high-speed rail corridors authorized under the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) (PL 102-240, December 18, 1991).² TEA-21 authorized the Empire Corridor, from New York City to Albany to Buffalo, New York, as a high-speed rail corridor. ISTEA defined “high-speed rail corridors” as corridors where trains operating at speeds of 90 miles per hours (mph) could be reasonably expected.
- **The Rail Passenger Service Act of 1970 (PL 91-518, October 30, 1970)** initially established a basic national rail passenger system and a rail passenger corporation – Amtrak. This Act and the **Passenger Rail Investment and Improvement Act of 2008 (PRIIA) (Division B, Title III of Public Law 110-432, October 16, 2008)**, called for significant improvements in the nation’s intercity passenger rail, including the development of high-speed rail corridors. PRIIA authorized the appropriation of funds to establish several new passenger rail grant programs, including capital investment grants to support intercity passenger rail service and high-speed corridor development. FRA consolidated these and other closely related programs into the High-Speed Intercity Passenger Rail (HSIPR) Program.

¹ Council on Environmental Quality, NEPA EIS regulations, 40 CFR 1502.13.

² The five high-speed rail corridors authorized under ISTEA were: the Midwest, providing 3 links from Chicago, IL to Detroit, MI and St. Louis, MO and Milwaukee, WI; Florida, linking Miami with Orlando and Tampa; California, linking San Diego and Los Angeles with the San Francisco Bay Area and Sacramento via the San Joaquin Valley; Southeast, connecting Charlotte, NC, Richmond, VA and Washington, D.C.; and Pacific Northwest, linking Eugene and Portland, OR with Seattle, WA and Vancouver, British Columbia, Canada.

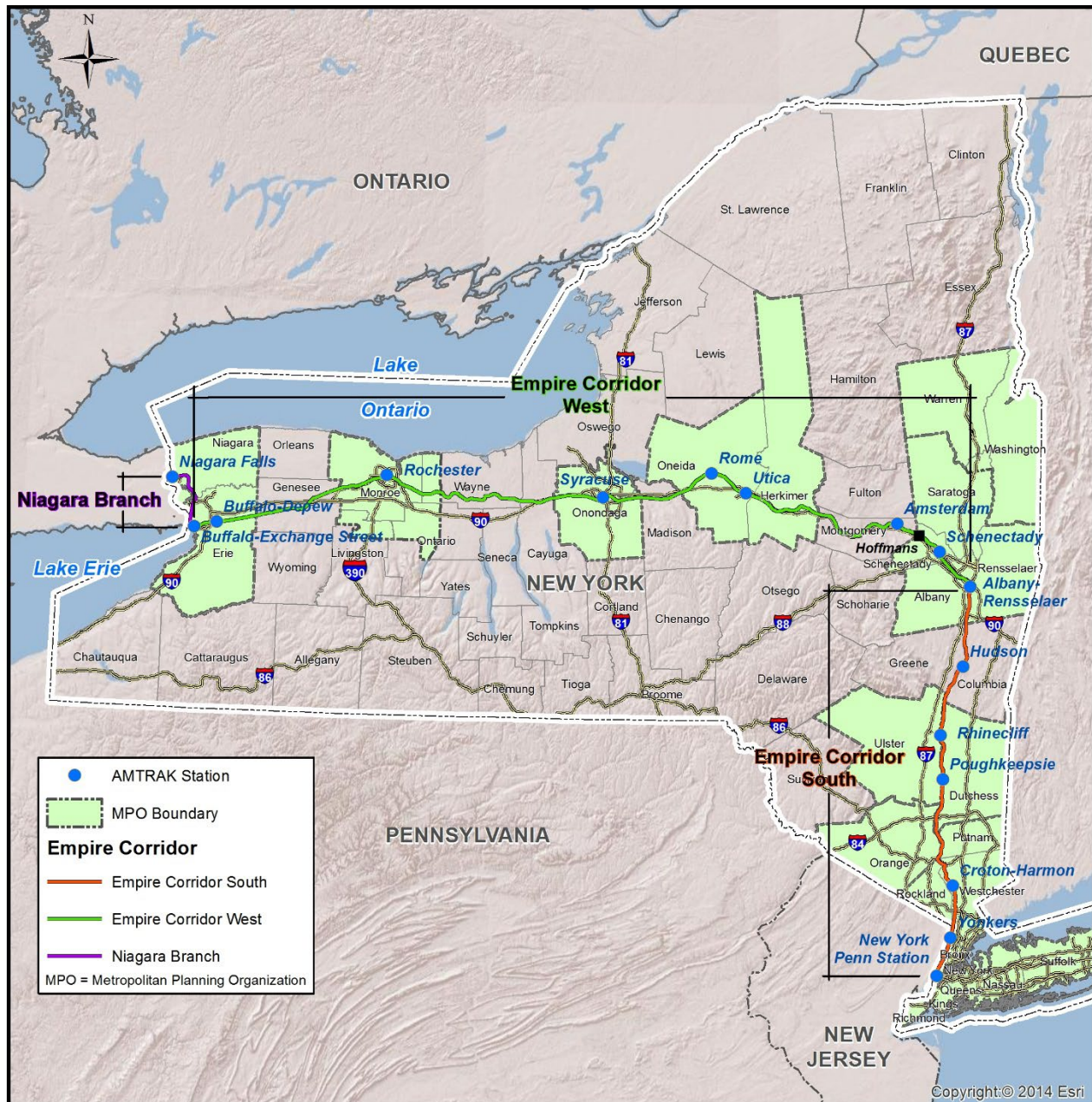


Exhibit 1-1—Program Location Map

- The **American Recovery and Reinvestment Act (ARRA) of 2009 (PL 111-5, February 17, 2009)** and the **Transportation, Housing and Urban Development and Related Agencies Appropriations Act for 2010 (Division A of the Consolidated Appropriations Act, 2010 (PL 111-117), December 16, 2009)** provided funding for the formation of the federal High-Speed Intercity Passenger Rail program (HSIPR). The Empire Corridor was one of the high-speed rail corridors to receive funding pursuant to these federal initiatives.

- The **Fixing America’s Surface Transportation Act, or FAST Act (PL 1114-94, December 4, 2015)** provided funding through 2020 and marked the first time intercity passenger rail programs were included in a comprehensive, multimodal surface transportation authorization bill, authorizing more than \$6.7 billion over five years for intercity passenger and freight rail grants.

The current plans for infrastructure funding by the federal government include funding for Amtrak and intercity passenger rail, to fund initiatives such as improved passenger rail service on the Empire Corridor. Under the Biden Administration, it is expected that the federal government will continue its role in supporting high speed rail projects by providing a number of funding programs. The 2021 Infrastructure Investment and Jobs Act (IIJA) includes \$89.9 billion of transit funding over the next five years and an additional \$66 billion for passenger rail improvements. Chapter 5 reviews in more detail the regulatory framework for intercity passenger rail improvements.

1.1.1. Tiered NEPA EIS

FRA and NYSDOT developed this Tier 1 Final EIS in accordance with the National Environmental Policy Act of 1969 (NEPA) and its implementing regulations (40 Code of Federal Regulations [CFR] Parts 1500-1508); FRA’s Procedures for Considering Environmental Impacts (64 Federal Register [FR] 28545); and the New York State Environmental Quality Review Act (SEQR) and its implementing regulations (6 New York Codes, Rules and Regulations [NYCRR] Part 617). The FRA and NYSDOT are using a tiered process, as provided for in 40 CFR 1508.28, to complete the environmental review of the program. “Tiering” is a staged environmental review process applied to environmental reviews for complex projects, such as the Empire Corridor Program.

The initial phase (“Tier 1 EIS”) of this process addresses broad corridor-level issues and sets forth a package of subsequent studies, proposals, and projects. The publication of the Tier 1 Draft EIS in the Federal Register on January 31, 2014 was a major milestone in the tiered review process for this program. This Tier 1 Final EIS considers public and agency comments received during the public comment period, which closed on April 30, 2014. The number and types of comments received during the public comment period reflect the public interest in, and support for, improvements to the Empire Corridor, including the introduction of high-speed rail (refer to Chapter 7).

The Tier 1 EIS evaluates a range of alternatives to meet the program needs of reducing infrastructure constraints and accommodating existing and projected demand. It establishes specific performance objectives for:

- Increasing train frequency and on-time performance (OTP),
- Reducing train travel time and automobile trips along the corridor,
- Attracting additional passengers, and
- Minimizing interference with freight rail operations.

This Tier 1 EIS identifies broad-based operational changes and investments in infrastructure and rolling stock (locomotives and passenger coaches) necessary to achieve those performance objectives. This document outlines the following in defining the program and evaluating five program alternatives:

- Defines the purpose and need for the proposed action including goals and objectives;
- Develops criteria and screens alternatives to eliminate those that do not meet the purpose and

need of the proposed action;

- Identifies the range of reasonable alternatives to be considered, consistent with the current and planned use of the corridor, existing services within and adjacent to the program area, and other planned improvements;
- Identifies the general alignment(s) and general right-of-way requirements of the reasonable alternatives;
- Identifies the infrastructure and equipment investment requirements for each reasonable alternative;
- Identifies the travel times, service schedule, frequencies, and stations serviced for the reasonable alternative(s);
- Identifies environmental constraints and considerations and performs high-level environmental review and evaluation of the reasonable alternatives under consideration.

In this Tier 1 Final EIS, FRA and NYSDOT identify a Preferred Alternative for the High Speed Rail Empire Corridor Program, consisting of required individual capital improvements needed to achieve program goals and objectives. A companion document for the High Speed Rail Empire Corridor Program, the Service Development Plan prepared for the Preferred Alternative, identifies the timing and sequencing for implementation of the improvements. The Tier 1 process will conclude with publication of the Record of Decision (ROD), presenting the decision on the Preferred Alternative for the Empire Corridor High Speed Rail Empire Corridor Program.

Tier 2 NEPA document(s) will evaluate in greater detail the component projects of the Empire Corridor Program selected in this Tier 1 process. The Tier 2 process will include detailed analyses based on refined engineering designs and operational plans and will identify site-specific environmental consequences. Site-specific mitigation measures for the Preferred Alternative will be developed where avoidance and minimization of impacts cannot be achieved. NYSDOT will continue to solicit input from the public and from reviewing agencies during the Tier 2 NEPA process.

1.1.2. Corridor and Program History

The Empire Corridor connects New York City with the largest cities in New York State, extending north through Yonkers, Poughkeepsie, and Hudson, and turning west at Albany to extend through Schenectady, Utica, Syracuse, Rochester, Buffalo, and terminating at Niagara Falls. The Empire Corridor, as defined in this Tier 1 Final EIS, consists of three main segments:

- **Empire Corridor South**, extending 142 miles north from Penn Station to just north of Albany-Rensselaer Station;
- **Empire Corridor West**, extending 294 miles west from approximately one mile north of the Albany-Rensselaer Station to just east of the Buffalo-Exchange Street Station; and the
- **Niagara Branch**, extending 28 miles north from a point located just east of Buffalo-Exchange Street Station to Niagara Falls.

The Empire Corridor is one of eleven designated high-speed rail corridors nationwide.

The Empire Corridor has been a vital rail transportation route of national significance for almost 200 years. This transportation route extends north from New York City through the Hudson Valley region and west through the Mohawk Valley region, south of the Adirondacks and north of the Catskills, to

Buffalo and Niagara Falls. The corridor developed along the historic “Water Level Route” that followed the canal system connecting Lake Erie and the Hudson River to transport goods and services to and from New York City. For many decades, the New York Central Railroad operated the route as a four-track high-speed mainline between Albany and Buffalo, carrying passenger and freight trains along express and local tracks. The Niagara Branch operated as a two-track shared use corridor, extending north from Buffalo along Lake Erie, the Niagara River, and into Canada at Niagara Falls. The transportation afforded by the canals and railroads connecting to the Great Lakes helped to establish New York City as an international trade center and the Atlantic port for the Midwest, and to transform Buffalo into the state’s second largest city. This network also enabled growth and development of the other major metropolitan areas (including the five other largest cities in the state) along this route.

Use of highways and airports constructed over the last generation has eclipsed rail use in the Empire Corridor for longer distance trips between upstate and western New York to New York City. The construction of the New York State Thruway (Thruway), consisting of Interstate 90 from Buffalo to Albany and Interstate 87 from Albany to New York City located roughly parallel to the Empire Corridor, has increased the reliance on automotive travel. The area is also serviced by regional airports, providing service from Buffalo, Rochester, Syracuse, and Albany to New York City. Through the second half of the 20th century, multiple factors, including competition from highways and airports, contributed to the decline of the railroads that led to bankruptcy of most of the railroad companies in New York and the Northeast by the early 1970s.

As part of cost-saving measures that started in the late 1950s, the New York Central Railroad (later Penn Central and Conrail) removed track infrastructure located along the Empire Corridor to reduce maintenance, operating and real estate property tax costs; creating a two-track system between Albany-Rensselaer Station and Buffalo, and a single-track line on portions of the Niagara Branch.

In 1970, the Rail Passenger Service Act established the National Railroad Passenger Corporation (Amtrak) to provide intercity rail service in 46 states and the District of Columbia. Prior to the establishment of Amtrak, private railroad freight companies provided intercity passenger rail service. Amtrak is currently the operator of intercity passenger rail service on the Empire Corridor. Amtrak assumed the common carrier obligations of private railroads in exchange for a right to priority access of their tracks for incremental cost.

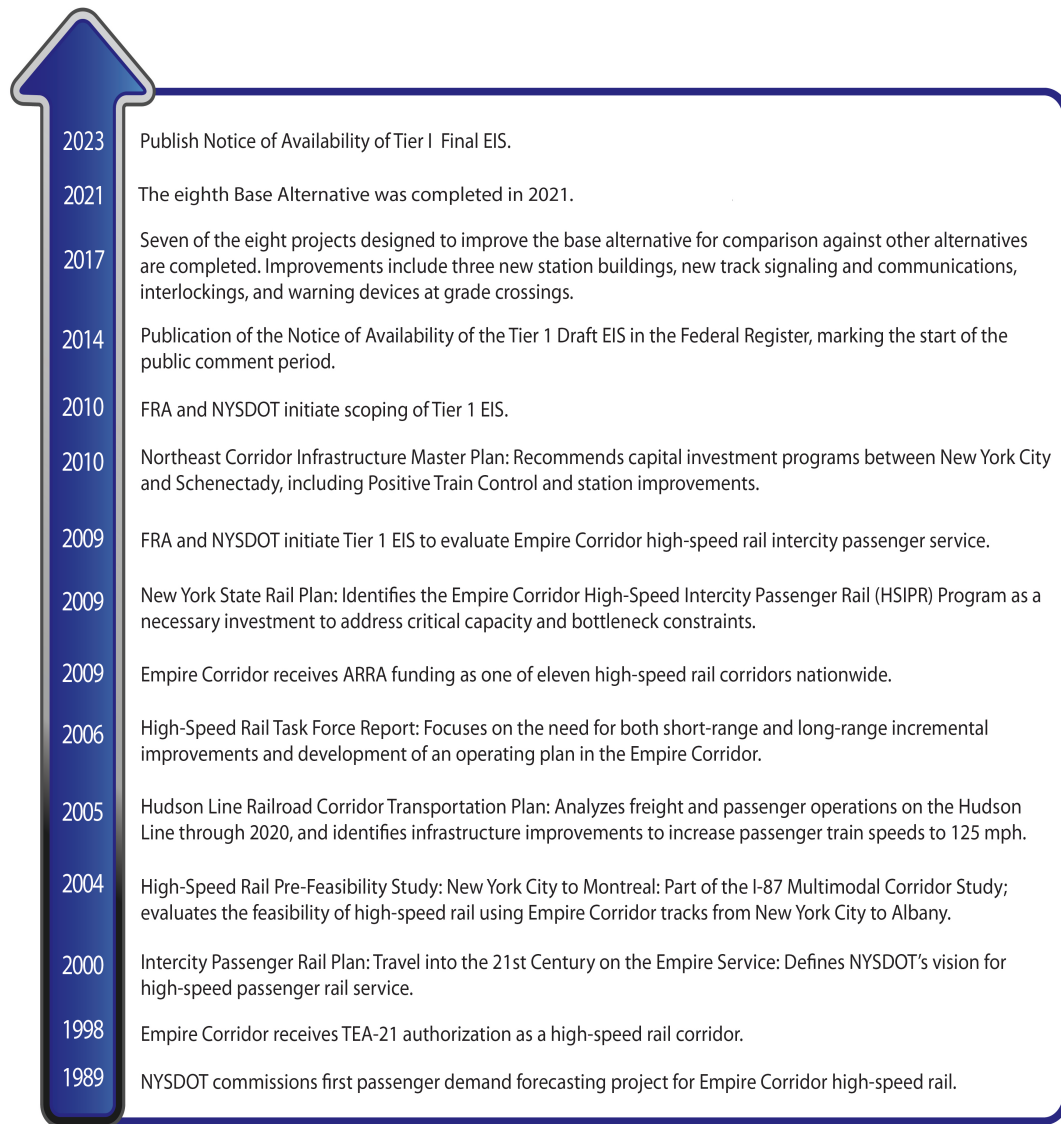
The possibility of instituting high-speed rail service along the Empire Corridor has been the focus of studies dating back twenty years. Developments in recent years have advanced rail planning and funding at both the federal and state levels culminating in this Tier 1 EIS program to evaluate high-speed passenger rail service along the Empire Corridor. Exhibit 1-2 presents a timeline of the recent program planning and development milestones for high-speed rail in the Empire Corridor.

1.1.3. CSXT Agreements

CSX Transportation, Inc. (CSXT), a private freight railroad company, owns more than half of the Empire Corridor (Exhibit 2-1 in Chapter 2). While recognizing the federal NEPA and New York State SEQRA legal framework upon which the environmental review process must be based, this Tier 1 EIS has been developed in consideration of two agreements between NYSDOT and CSXT (dated May 28, 2010), both crafted to preserve the independence and integrity of the EIS process: “Framework Agreement Concerning Certain Rights and Responsibilities with Respect to New York High Speed Rail” and “Agreement for Progressing a Tier 1 Environmental Impact Statement” (“Agreements”) (attached as Appendix J).

CSXT has agreed to work with NYSDOT as the Tier 1 EIS is being developed by providing assistance and technical guidance, as well as documents and access to its property, as outlined in the

Exhibit 1-2—High Speed Rail Empire Corridor Planning Timeline



Agreements. CSXT has also agreed to take into consideration the results of the Tier 1 EIS, as well as the views of the FRA, State of New York, Amtrak, the Port of New York/New Jersey and its customers. At the same time, CSXT has stated that it has the obligation to preserve and grow its freight rail capacity and will maintain sole discretion to decide the safety and use of its property.

The position taken by CSXT and agreed to by NYSDOT in the Agreements must be considered in the implementation of the Preferred Alternative chosen by NYSDOT and FRA on property owned by

CSXT. One principle set forth in the Agreements is that CSXT is entitled to compensation for the use, acquisition, or diminishment in value of its property resulting from any project advanced as a result of the Tier 1 EIS. While the development of the cost of alternatives must and will include the recognition of this principle, the negotiation of the actual value of any compensation to CSXT is not part of this Tier 1 EIS, and will be developed if and when necessary as part of Tier 2 program advancement.

For these reasons, independent analysis by CSXT of the impacts to CSXT property will be extremely important and valuable to NYSDOT and FRA as the NEPA process continues. This Tier 1 Final EIS considers, to the extent appropriate, CSXT comments and the other comments received and public hearings on the Tier 1 Draft EIS.

1.2. Existing Transportation Deficiencies

The existing Empire Corridor passenger rail service is negatively impacted by inadequate service levels, operational constraints (track conditions, alignment, and obsolete or inadequate track and signal systems), and delays resulting from pervasive conflicts with freight traffic. As a result, passenger rail service is not viewed by travelers as a viable, attractive transportation option, particularly to and from points west of Albany-Rensselaer Station.

Existing inadequate infrastructure to support rail operations limit Empire Corridor service. For Amtrak's current rating of reliability on its routes, 80 percent on-time performance (OTP) is considered to be a "passing" grade. In 2019,³ Amtrak rated the Empire Service between New York and Albany as having 91 percent of on-time customers (where customers arrive within 15 minutes), but the full Empire Service operating between New York to Niagara Falls only operated with 66 percent of on-time customers (considered by Amtrak to be a failing grade). Of the other routes operating on Empire Corridor in 2019, only the Ethan Allen Express received a passing OTP (85 percent). The Adirondack had a 2019 customer OTP of 73 percent, and the Maple Leaf had an OTP of 67 percent.

Furthermore, although maximum authorized speeds along portions of the Empire Corridor are 79 mph on the Buffalo to Hoffmans (west of Albany-Rensselaer) segment and 110 mph on the Hoffmans to New York City segment (refer to Exhibit 1-1), actual operating speeds along the majority of the Empire Corridor are considerably lower due to track conditions, alignment, and obsolete or inadequate track and signal systems which constrain capacity and speed.

Existing passenger rail service is infrequent relative to other available modes of transportation. For example, in 2019, there was a strong travel market between New York City and Albany, and passenger rail captured only 11 percent of that market. In 2019, the Empire Corridor offered thirteen weekday trips, with the earliest Albany-Rensselaer arrival time of approximately 9:50 a.m. This limited service does not accommodate business weekday schedules. Additionally, travel by rail between New York City and Buffalo is not a viable option for a business traveler, given the existing frequency of service and travel time. There were only four weekday trips between New York City and Buffalo. Furthermore, the trip from Buffalo to New York City can be made in less than two hours by air and under seven hours by car, compared to approximately eight hours by the existing Empire Corridor passenger service provided by Amtrak.

Despite these constraints and service limitations, ridership had historically been growing. Ridership

³ This Tier 1 Final EIS describes 2019 rail ridership, OTP, and schedule as the latest available pre-pandemic condition. Ridership reported for the corridor excludes the ridership on the Lake Shore Limited, Adirondack, and Ethan Allen Express services.

on the Empire Corridor increased by 54 percent (561,881 passengers) over 17 years to total more than 1.6 million passengers in 2019. Since 2001, ridership on the Buffalo to Albany-Rensselaer portion of the corridor has more than doubled, at the same time freight and commuter rail volumes have grown. Projections through 2035 indicate that freight traffic will continue to increase. Ridership on the Metro-North Railroad's Hudson Line has increased 26 percent (3.6 million additional passengers) over 18 years from 2001 through 2019. Congestion is expected to worsen as demand for passenger, commuter, and freight rail grows.

Existing and forecasted socioeconomic and transportation market conditions in the Empire Corridor indicate an opportunity for an improved Empire Corridor passenger rail service to grow further, offering a viable alternative mode of intercity travel in the Empire Corridor.

1.3. Purpose and Need

The purpose of the program is to improve service so that the Empire Corridor continues to serve as a critical link connecting the national, regional, and local transportation network. Currently, the train speeds, number of trains servicing the corridor, and reliability of services are insufficient to accommodate the demand in present and future railroad services. Despite these constraints and service problems, ridership on the Amtrak Empire Service, the Metro-North, as well as freight traffic have grown. Since 2001, ridership on the Buffalo to Albany portion of the Empire Corridor has more than doubled, at the same time competing rail services for Empire Corridor trackage for freight and commuter rail volumes have also grown. Projections through 2035 indicate that Amtrak passenger service, Metro-North commuter rail, and freight traffic will continue to increase. Congestion is expected to only worsen as demand for intercity passenger, commuter, and freight rail services all continue to grow on these shared-track systems. The sections below provide more information on the purpose and need for the program.

1.3.1. Program Purpose

The purpose of the High Speed Rail Empire Corridor Program is to introduce higher passenger train speeds on the Empire Corridor and improve reliability, travel times, service frequency, and passenger amenities. The High Speed Rail Empire Corridor Program will improve passenger rail service along the corridor and, in so doing, attract additional passengers, increase travel choices, and contribute to a balanced, multi-modal transportation system.

Improved service along the Empire Corridor will better connect the principal population centers of western New York State with Albany and New York City, further enhancing connections to Northeast Corridor (NEC) passenger rail service (Philadelphia and Washington) and other markets (Midwest and New England), and facilitating international travel to Canada. Its location within one of the most populated regions in the country, as well as its importance to national and international freight traffic, underscores the importance of the Empire Corridor to regional development. Providing time-sensitive and efficient service will, in turn, promote economic vitality, improve quality of life for residents, and reduce automotive travel and emissions.

1.3.2. Program Needs

This program is being undertaken to meet the following needs: reduce infrastructure constraints and accommodate existing and projected demand.

Reduce Infrastructure Constraints

The Empire Corridor is distinguished by its diversity of private and public ownership and mix of passenger and freight usage (refer to Exhibit 2-1 in Chapter 2). Empire Corridor West is the most important and heavily used freight route in the state, carrying one of the highest volumes on the CSXT system nationwide. It is the major gateway to Canada; the Midwest; and the Port of New York/New Jersey, the third largest container port in the United States.⁴ Metropolitan Transportation Authority's (MTA's) Metro-North Railroad (Metro-North), operating the Hudson Line commuter rail service on the southern half of Empire Corridor South, is the second busiest commuter railroad in the country.

Outside of the Northeast Corridor, Amtrak intercity passenger services run almost exclusively on railroads owned and controlled by private freight and commuter railroads. This can create delays due to freight and commuter train interferences, track work and slow orders, as well as other factors largely beyond the control of Amtrak. Freight trains generally operate at speeds slower than passenger trains, in accordance with FRA track class operating restrictions (refer to Appendix E). Slower-moving freight trains have to move to sidings (sections of low-speed track separate from mainline or branch tracks) to let passenger trains pass or the faster-moving passenger train has to slow down behind the slower freight train. This does not allow for optimal usage of tracks. Overall, these problems in the Empire Corridor result in over 161,000 minutes of annual delay, according to analysis of data provided to NYSDOT by Amtrak.⁵ This represents more than seven hours per day of total train delay to Amtrak trains in the corridor.

Speed restrictions caused by the competing uses of the rail system are one of the most common causes of delay along Empire Corridor South between Albany-Rensselaer and Penn Stations. Particularly on the Hudson Line, users with different operating requirements (mix of speeds, loads, and types of equipment) can cause congestion that trickles throughout the system. The Hudson Line has the greatest variety of types of users, and a delay in Albany can cause a train further south to miss its window, creating cascading delays that affect other operators.

Passenger rail service in Empire Corridor West is also frequently delayed as a result of the volume of freight and passenger service that shares the corridor's constrained infrastructure west of Albany-Rensselaer Station. While demand for service on the Empire Corridor has grown, the system is operating as a two-track system west of Schenectady, and is reduced to single-track in two places on the 27-mile section of track between CP169 at Hoffmans, New York and CP142 at Albany-Rensselaer; a passing siding is available between CP156 at Carman and CP160 at Schenectady. The single-track section requires that a train may have to wait at Schenectady Station or Albany-Rensselaer Station for up to 18 minutes if a train is



Exhibit 1-3—Livingston Avenue Bridge

⁴ In 2011, the Port of New York and New Jersey had the third highest cargo volume in the United States, following the Port of Los Angeles, with the highest cargo volume; and the Port of Long Beach, with the second highest cargo volume.

⁵ Amtrak Conductor Delay Report, July 1, 2009 to June 30, 2010.

traveling in the opposing direction.⁶

Deferred infrastructure maintenance has resulted in areas of speed restrictions that further reduce capacity, including the Livingston Avenue Bridge ⁷between Albany-Rensselaer and Schenectady Stations, where speed is presently restricted to 15 mph. There are several yards and industrial lead tracks that also contribute to congestion and negatively affect travel times and reliability for both freight and passenger rail services. Infrastructure constraints on the Empire Corridor have been extensively documented in a number of planning studies. Key findings are noted as follows:

- The NEC FUTURE program is being undertaken to create a comprehensive plan for the Northeast Corridor. In July of 2017, the FRA published a Record of Decision (ROD) on the program. The ROD identifies “*Empire Corridor Planning*” for “*engineering and environmental analysis to support improved passenger rail on the Empire Corridor*” as related improvements. The ROD also identifies as related improvements other ongoing specific projects along the Empire Corridor that are part of the overall program of improvements.
- *Northeast Corridor Infrastructure Master Plan* (2010) identifies major challenges to the reliability and convenience of both existing and proposed intercity passenger rail service in the Empire Corridor between New York City and Schenectady. ⁸ Identified challenges include numerous chokepoints caused by obsolete or inadequate track and signal systems, which constrain capacity and speed. The Master Plan identifies the single-track sections of the segments between Albany and Schenectady as among the greatest points of conflict for intercity trains operating over the Empire Corridor. Currently NYSDOT and Amtrak are completing the installation of double-track between CP143 at Albany-Rensselaer and CP156 at Carman; this will provide for a double track railroad between Schenectady and Albany-Rensselaer. In addition, it indicates the need for a new Livingston Avenue Bridge and additional track and extended platform and yard facilities in the Albany-Rensselaer Station to alleviate current congestion and accommodate increased service. NYSDOT and Amtrak have completed the installation of a new 4th track in Albany-Rensselaer and upgrading of interlockings at both ends of the station. The 2010 Master Plan also cites the need for improvements on freight-only infrastructure in this area to minimize conflicts between freight and intercity service. It identifies capital investment programs by segment along the Empire Corridor from New York City to Schenectady to reduce or eliminate freight/passenger train conflicts, thus improving reliability and convenience of intercity passenger rail service. These improvements were based on specific projects identified in the *Hudson Line Railroad Corridor Transportation Plan* and the *New York State Rail Plan*.⁹ The programs identified included the following segments:
 - Empire Connection Improvements
 - Hudson Line Commuter and Intercity Improvements
 - Empire Corridor Improvements
 - Albany-Rensselaer Station and Yard Capacity Improvements
 - Positive Train Control (PTC)
 - Station Improvements

⁶ High Speed Rail Task Force. Final Report: Connecting New York’s Future. January 2006.

⁷ A separate NEPA study is ongoing for the Livingston Avenue Bridge. Project website is accessible at: <https://www.dot.ny.gov/display/projects/livingstonavebridge>

⁸ The NEC Master Plan Working Group. *The Northeast Corridor Infrastructure Master Plan*. May 2010.

⁹ NYSDOT. *New York State Rail Plan – Strategies for a New Age*. 2009.

The Northeast Corridor (NEC) website identifies, as a project on a connecting corridor, the Empire Corridor Hudson Line Improvements.

- The *Hudson Line Railroad Corridor Transportation Plan* (2005)¹⁰ analyzes freight and passenger operations through 2020, and identifies infrastructure improvements to increase passenger train speeds to 125 mph. The plan analyzes the capacity of the system, identifies individual choke points, and cites specific improvements, such as track crossover switches, high-level platforms, and additional areas of track and yard capacity upgrades to improve the flow of rail traffic.
- The New York State Senate High Speed Rail Task Force Action Program identifies the existing operational constraints on Empire Corridor West in its final report, *Connecting New York's Future* (2006): *"In the Albany to Buffalo Corridor, increasing freight traffic, greater distances and variable operating and track conditions are the major constraints. Over the long term, freight service and a quality passenger service cannot coexist on the same tracks at speeds over 90 mph. Empire Corridor service will not compete successfully with air travel for trips between Buffalo and New York City without a new dedicated passenger rail guideway."*¹¹

Accommodate Existing and Projected Demand

As shown in Exhibit 1-4, Empire Corridor ridership steadily increased over the past eighteen years. Ridership increased an average of approximately 3.7 percent a year from 2002 to 2011, and an average annual increase of approximately 1.4 percent from 2011 to 2019.¹² Rail ridership was approximately 1.4 million person-trips in 2011, increasing to 1.6 million person trips in 2019.

The *New York State Rail Plan* identifies the need to address capacity for projected increases in both the freight and passenger rail markets. The *New York State Rail Plan* notes: *"Amtrak is seeing some of its largest percentage ridership increases along the Buffalo-Albany rail corridor despite the level of freight-related delay. With high gas prices, ridership is expected to keep growing; this increase will create pressure for more reliable service and, eventually, more frequency of passenger trains. At the same time, CSXT is expecting increases in freight rail business."*¹³

The Vision for 2020 in the *New York State Rail Plan* calls for an intercity passenger rail system to transport double the ridership on the rail corridor between New York City and Albany, Albany and Buffalo, and between Albany and Montreal.

Studies forecast growth in both passenger and freight traffic. The *Hudson Line Rail Corridor Transportation Plan* (2005) anticipates that total rail traffic along the Hudson Line commuter rail line will increase substantially by 2022.¹⁴ The Hudson Line ridership increased a total of 35 percent in the 15 years prior to 2010, and ridership has steadily increased 11 percent since then. Commuter rail ridership increased approximately 2.3 percent annually in the 10 years prior to 2010. Since 2010, commuter rail ridership has increased an average of 1.2 percent a year to 2019.

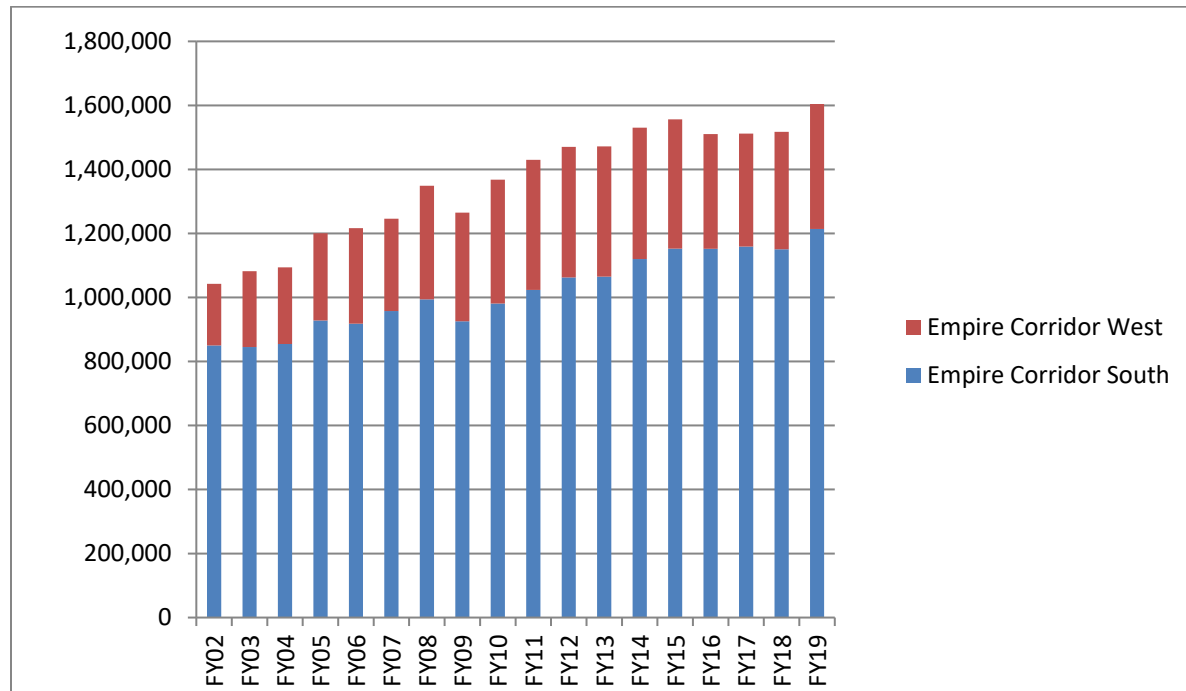
¹⁰ Systra Engineering. *Hudson Line Railroad Corridor Transportation Plan Final Report* (Document No. M40801-11/9518/STU-137). Prepared for New York State Department of Transportation, November 2005.

¹¹ High Speed Rail Task Force. *Final Report: Connecting New York's Future*. January 2006.

¹² 2019 was used for ridership as it represents the latest available pre-pandemic condition.

¹³ NYSDOT. *New York State Rail Plan – Strategies for a New Age*. 2009.

¹⁴ Systra Engineering. *Hudson Line Rail Corridor Transportation Plan Final Report* (Document No. M40801-11/95 18/STU-137). Prepared for Amtrak, Canadian Pacific Railway, CSXT, MTA Metro-North Railroad, NYSDOT. November 2005.

Exhibit 1-4—Empire Corridor Ridership FY02 to FY19

Source: Amtrak, 2011-2019. Note that Amtrak's fiscal year operates from October 1 to September 30.

The United States Department of Transportation (U.S. DOT) forecasts that rail freight traffic will grow 88 percent by 2035,¹⁵ and cross border rail shipments will triple by 2035.¹⁶ The Niagara Frontier Urban Area Freight Transportation Study estimates a major increase in rail freight shipments, from 47 million tons in 2004 to 93 million tons by 2035.¹⁷ The Association of American Railroads forecasts freight traffic on the Empire Corridor will increase by 50 to 100 percent by 2035.¹⁸ A study of rail freight traffic by the Greater Buffalo-Niagara Regional Transportation Council (GBNRTC) forecasts almost 100 percent (96.7%) growth in rail carload and intermodal traffic between 2004 and 2035.¹⁹ The growth in cross-border rail traffic was estimated by the Niagara Frontier Urban Area Freight Transportation Study to be 183.2 percent between 2006 and 2035.²⁰ Projections of freight use by the New York City Economic Development Corporation²¹ anticipated freight volumes increasing by 58 percent from 198 million tons in 2016 to 312 million tons in 2045. Of the current freight reaching New York City, only 2 percent travels by rail. The goals of the "Freight NYC" plan include expanding movement of freight by rail.

¹⁵ U.S. DOT Freight Analysis Framework, as cited by New York State Rail Plan (2009).

¹⁶ Niagara Frontier Urban Area Freight Transportation Study, as cited by New York State Rail Plan (2009).

¹⁷ Wilbur Smith Associates. Niagara Frontier Urban Area Freight Transportation Study Final Report, Project No. 06 Freight. Prepared for the GBNRTC, August 2010.

¹⁸ Association of American Railroads. National Rail Freight Infrastructure Capacity and Investment Study (2007).

¹⁹ GBNRTC. 2035 Long-Range Transportation Plan Update. May 2010. Accessed September 27, 2011.

²⁰ Wilbur Smith Associates. Niagara Frontier Urban Area Freight Transportation Study, Technical Memorandum No. 3: Freight Transportation Market Profiles, Project No6 Freight. March 6, 2009.

²¹ NYC EDC, "Freight NYC: Goods for the Good of the City," 2016.

1.4. Performance Objectives

NYSDOT identified performance objectives for the High Speed Rail Empire Corridor Program as measurable objectives that directly relate to the program purpose and need to reduce infrastructure constraints to accommodate existing and projected demand. These performance objectives are:

- Improve system-wide on-time performance (OTP) to at least 90 percent;
- Reduce travel time along all segments of the Empire Corridor;
- Increase the frequency of service (number of daily round trips) along Empire Corridor West beyond the existing four daily round trips;
- Attract additional passengers;
- Reduce automobile trips, thereby reducing highway congestion;
- Minimize interference with freight rail operations.

These six performance objectives are used to evaluate and rank the high-speed rail alternatives developed for the High Speed Rail Empire Corridor Program. The environmental impacts of these alternatives are also considered, as presented in this Tier 1 Final EIS, and were an important factor in selecting the Preferred Alternative to be advanced in Tier 2.

1.5. Transportation-Related Goals

In addition to the measurable performance objectives outlined above, NYSDOT has identified the following broad-based transportation-related goals of the High Speed Rail Empire Corridor Program. NYSDOT anticipates that the program will have positive impacts on the local and regional economy and will reduce greenhouse gas emissions.

- **Increase travel choices by providing additional commuting and travel options for residents and workers.** The program will provide increased intercity passenger rail access to major metropolitan areas and will provide additional commuting and other travel options for residents and workers. This improved transportation access will potentially boost both the number of jobs available and the ability of workers (particularly those without alternative means of transportation) to access work locations, thereby expanding available labor markets. The program's proposed rail passenger amenities, including improved station operations, accessibility, and parking, will help to attract additional passengers and will contribute toward expanding travel choices in the Empire Corridor. A U.S. Conference of Mayors' report indicates that the potential travel efficiency gains through high-speed rail can lead to business productivity increases: car and truck travelers will benefit from reduced road congestion; airport users will benefit from reduced airport congestion; and travelers without car access will benefit by traveling to places that were previously unavailable to them.²² Providing options for travelers and connecting the major metropolitan areas will improve the quality of life for Empire Corridor residents and workers.
- **Contribute to economic revitalization by accommodating forecasted growth in population and employment and corridor rail freight operations and by accommodating and attracting additional tourists.** New York City is the nation's largest economic center, and

²² Economic Development Research Group, Inc. *The Economic Impact of High Speed Rail on Cities and their Metropolitan Areas*. Prepared by the U.S. Conference of Mayors (undated), released June 2010.

is one of the three largest economic centers in the world, along with London and Tokyo. Population growth, particularly growth in the New York metropolitan area, has brought corresponding growth in freight movement and commuter rail service levels. The U.S. Conference of Mayors' report projects that economic benefits of New York City to Albany high-speed rail service to the Albany metropolitan area alone would range from \$358 million (with 79/90 mph service) to \$523 million (with 110 mph service) in business sales for incremental-medium service, and would reach nearly \$2.5 billion with 220 mph service.²³ Improving freight rail access in the corridor has national trade and economic implications as well, given the importance of the Buffalo and Niagara crossings, connections to the Port of New Jersey/New York and the Midwest, and freight movement on the line connecting to these markets. The Empire Corridor also connects the state's major tourism destinations, including New York City, Niagara Falls, the Finger Lakes Region, and the Hudson Valley. In 2019, and for the 19th consecutive year, New York was the most visited state by overseas travelers (over 10 million visitors or 26 percent of all overseas visitors in the U.S.), according to the U.S. Department of Commerce's National Travel and Tourism Office.²⁴ The proposed high-speed rail program would support increased travel and tourism, a substantial and growing component of the of New York State economy.

- **Improve environmental quality by facilitating rail use and reducing reliance on automobile travel, thereby reducing fuel use and greenhouse gas (GHG) emissions.** Reducing reliance on automotive travel will provide benefits to air quality and will reduce greenhouse gas emissions. A 2006 study, *High Speed Rail and Greenhouse Gas Emissions*,²⁵ calculated emissions saved and generated through institution of high-speed rail nationwide. The study estimated the net reduction in greenhouse gas emissions due to high-speed rail service along the Empire Corridor to be almost half a billion pounds of annual carbon dioxide emission. Benefits would accrue from not only diverting passenger trips from other modes, but also by facilitating freight rail use and future growth in rail. For each one percent increase in long-haul freight that changes from truck to rail, fuel savings would be approximately 111 million gallons per year and annual greenhouse gas emissions would fall by 1.2 million tons.

²³ Economic Development Research Group, Inc. *The Economic Impact of High Speed Rail on Cities and their Metropolitan Areas*. Prepared for the U.S. Conference of Mayors (undated), released June 2010.

²⁴ U.S. Department of Commerce, National Travel and Tourism Office. "2019 U.S. Travel and Tourism Statistics (Inbound): 2019 Overseas Visitation Estimates to the States, Cities, and Regions Visited." 2019. Accessed April 2, 2021.

²⁵ Center for Clean Air Policy, Center for Neighborhood Technology. *High Speed Rail and Greenhouse Gas Emissions*. January 2006. Accessed July 8, 2011. < <http://www.cnt.org/repository/HighSpeedRailEmissions.pdf> >

2. Existing Transportation Conditions and Major Markets

Chapter 2 describes the Empire Corridor's existing transportation conditions and major markets. Section 2.1 presents an overview and route description of the existing Empire Corridor rail system. Section 2.2 describes the importance of the Empire Corridor to major markets, including the existing regional transportation market. Sections 2.3 through 2.5 present the existing conditions of the Empire Corridor freight, commuter rail, and intercity passenger rail service, and Section 2.6 addresses safety considerations. Appendix E contains additional information on the ridership study of major markets (automobile, bus, air, rail), other rail linkages and routes, and rail infrastructure (including signals, track classifications and speeds, rail yards, bridges, tunnels, and rolling stock). Appendices B and D present additional detailed information on the ridership analysis and rail simulations.

2.1. Empire Corridor Rail System

2.1.1. Railroad Ownership

Exhibit 2-1 illustrates track ownership on the Empire Corridor. Amtrak owns, maintains, and dispatches the southernmost 11 miles of track on Empire Corridor South (west side line of former New York Central Railroad), from Penn Station to the Spuyten Duyvil Bridge that spans the Harlem River at the northern tip of Manhattan.

Metro-North owns the track along the east side of the Hudson River, from the Spuyten Duyvil Bridge to Poughkeepsie, for its Hudson Line service with responsibility for maintenance and dispatching.

With the exception of one short (6.8-mile) segment owned by Amtrak west of the Schenectady Station, between the station and Hoffmans, CSXT is the owner of the Empire Corridor rail infrastructure from Poughkeepsie to Niagara Falls. This CSXT corridor comprises the:

- Hudson Subdivision (Poughkeepsie north to Albany-Rensselaer and west to Hoffmans);
- Selkirk Subdivision (Hoffmans to Amsterdam);
- Mohawk Subdivision (Amsterdam to Syracuse);
- Rochester Subdivision (Syracuse to Buffalo);
- Buffalo Terminal Subdivision in Buffalo; and
- Niagara Subdivision (Buffalo to Niagara Falls).

In 2012, NYSDOT facilitated a lease agreement between CSXT and Amtrak for portions of the Empire Corridor between Poughkeepsie, Albany-Rensselaer, and Hoffmans, NY. When combined with previous lease agreements for portions of the corridor within this 94-mile segment, Amtrak assumed full responsibility for dispatching and maintenance from the northern boundary of Metro-North control through Albany to Control Point (CP)²⁶ 169 at Hoffmans, where CSXT's freight-only Selkirk Branch joins the Empire Corridor. The 2012 lease agreement marks the first time in the corridor's history that passenger-only carriers have controlled the entire Empire Corridor from New York to Albany and beyond to Hoffmans. CSXT retains responsibility for the operation of freight trains within the territory leased by Amtrak as well as on the Metro-North Hudson Line. West of Hoffmans, CSXT remains responsible for maintenance and dispatching of the Empire Corridor.

²⁶ A control point is an interlocking, or the location of a track signal or other marker, the indications of which dispatchers can specify when controlling trains.

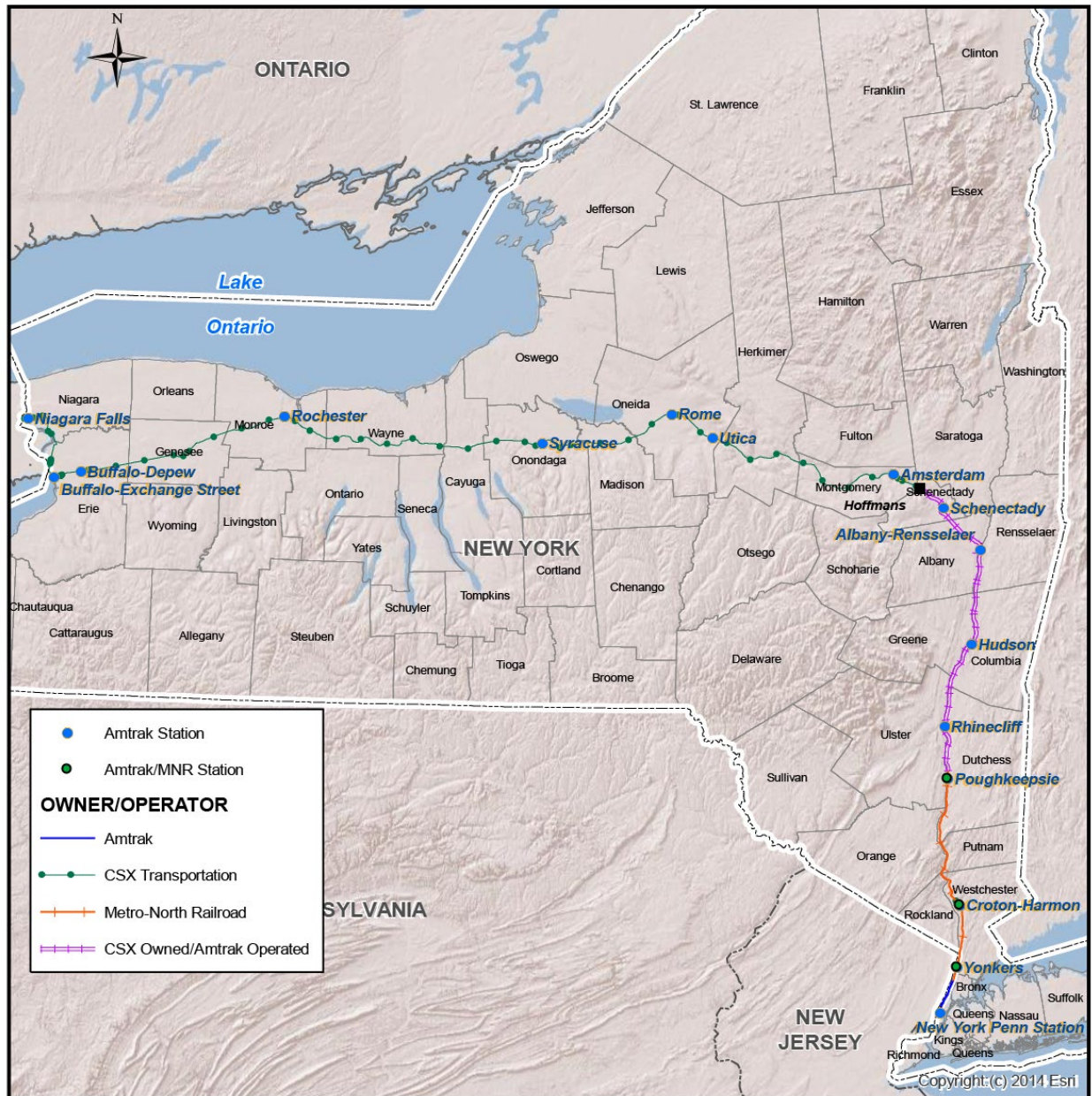


Exhibit 2-1—Empire Corridor Ownership

North of the Buffalo Terminal Subdivision, CSXT owns most of the Niagara Subdivision as far as CP 28. In December 2012, Amtrak assumed ownership, control, and maintenance of approximately 0.37 mile of former CSXT and Canadian National Railway track from immediately west of CP-28 to the U.S.-Canada international border on the Whirlpool Bridge. The Whirlpool Bridge, a railroad and vehicular passenger bridge located at the international border crossing, is owned and maintained by the Niagara Falls Bridge Commission.

2.1.2. Route Description

Empire Corridor South (New York City to Albany)

The Empire Corridor South extends 142 miles (Milepost [MP] 0 to 143²⁷) north from Penn Station to approximately one mile north of Albany-Rensselaer Station in Rensselaer County (refer to Exhibit 2-3). This route continues from Manhattan through the Bronx (Bronx County), Yonkers and Croton-Harmon (Westchester County), Poughkeepsie (Dutchess County), extending to approximately one mile north of Albany-Rensselaer Station (Rensselaer County). The line runs through the Hudson Valley north to the Capital District.

Metropolitan Transportation Authority's (MTA's) Metro-North Railroad (Metro-North) operates Hudson Line commuter rail service (formerly Hudson River Line and New York Central Railroad) between Poughkeepsie and Grand Central Terminal (GCT) (MP 0 to 73.5). Empire Corridor South consists of the Empire Connection and the Metro-North/CSXT Hudson Line. The Empire Connection runs from Penn Station, northward along the west side of Manhattan, across the Harlem Ship Canal at Spuyten Duyvil Bridge (refer to Exhibit 2-2), and then joins with Metro-North's Hudson Line, a distance of 10.8 miles.

Exhibit 2-3 shows the two segments of the Metro-North Hudson Line. The Hudson Line is double-tracked north of the Croton-Harmon Station at Croton-on-Hudson (Milepost 33.2), with some three-track sections. To the south of Croton-Harmon Station, the line is mostly four tracks (two express and two local) and includes an electrified third rail. This configuration, generally speaking, does not affect train speeds. The southern portion of the Hudson Line begins at interlocking Control Point (CP) 12 on the Hudson Line, where the Empire Connection from Penn Station joins Metro-North's Hudson Line from GCT. The length of the segment is 21.4 miles, ending at Croton-Harmon, MP 33.2.



Exhibit 2-2—Spuyten Duyvil Bridge over Harlem River

Portions of the Hudson Line have 110 mph passenger train operation and limited freight activity (approximately four trains a day). The Empire Corridor South has a capability of accommodating the second highest rail car weight limit class (286,000 pounds) for freight. In 2019, Metro-North operated approximately 59 (weekend) and 85 (weekday) daily passenger roundtrips along the Hudson Line, of which roughly one third are express trains servicing Poughkeepsie and most of the remaining trips are local trains to Croton-Harmon Station or points south. In 2019, Amtrak operated thirteen daily roundtrips (weekdays) along the Empire Corridor South between Albany-Rensselaer and New York City, with eleven daily roundtrips on the weekends.

²⁷ Mileposts referenced in this Tier 1 EIS are measured south to north using Hudson Line mileposts from Grand Central Terminal. Mileposts referenced extend north to Albany-Rensselaer, then east to west on Empire Corridor West. Although Empire Corridor South extends to MP 143, the mileage from Penn Station to MP 143 totals to 142 miles. This is because the mileposts, as designated by the railroads, skip a mile where the Hudson line merges with the Empire Corridor at the Manhattan-Bronx county line near the Spuyten Duyvil Station.

In addition to Empire Service to Buffalo and points beyond, this section of track also accommodates Amtrak service that extends north of Schenectady Station on the Canadian Pacific Railway to Montreal (Adirondack—one daily roundtrip) and Vermont (Ethan Allen Express—one daily roundtrip). There is also one daily connecting service from Albany-Rensselaer to Boston, Massachusetts. These regional routes extending beyond the Empire Corridor are shown in Exhibit 2-4, which shows the regional linkages including to the Northeast Corridor and international routes in Canada.

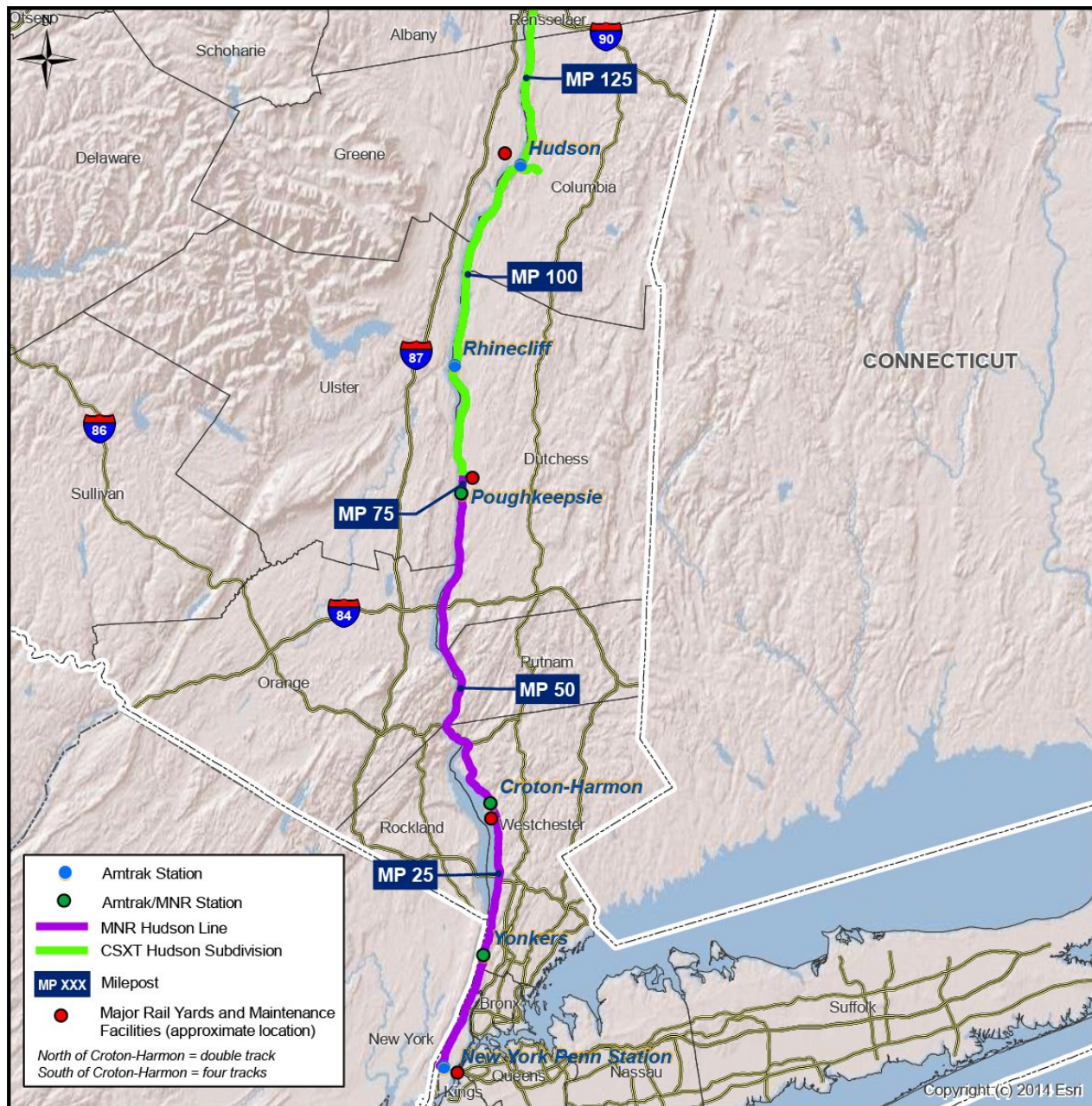


Exhibit 2-3—Empire Corridor South



Exhibit 2-4—Additional and Adjoining Rail Corridors

With few exceptions, the tracks generally follow the east shoreline of the Hudson River. The northern portion of the Metro-North Hudson Line begins at MP 33.2 at Croton-Harmon Station and ends at MP 73.5 at Poughkeepsie Station. The under running third rail electrification ends at Croton-Harmon Station and all trains north of that point are operated with conventional diesel electric locomotives. Parts of this segment have sharper curvature than do segments to the south. These curves limit maximum speed to 45 to 55 mph; otherwise, 80 mph is the predominant speed.

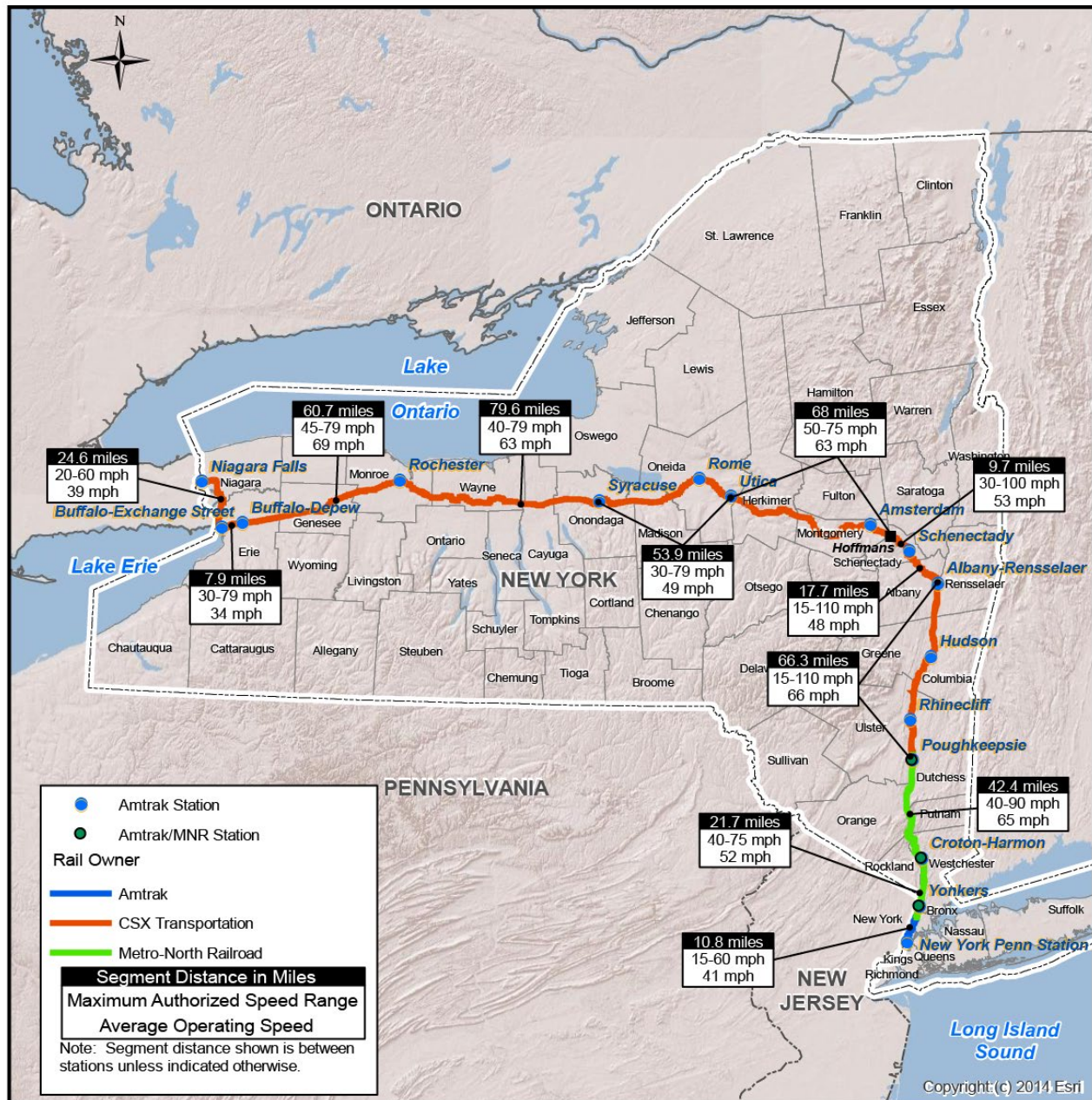


Exhibit 2-5—Empire Corridor Maximum Authorized Speed Ranges and Average Operating Speeds²⁸

Exhibit 2-5 shows Maximum Authorized Speeds and average operating speeds along Empire Corridor. The northern section above the Hudson Highlands, where the Hudson River and the railroad are significantly straighter, allows for 90 mph operation of passenger trains. Leaving Croton-Harmon Station to the north, Amtrak intercity trains stop only at Poughkeepsie.

²⁸ Exhibit displays MASs and average speeds as reported in the Tier 1 Draft EIS.

The Amtrak Hudson Line begins at Poughkeepsie Station, MP 73.5, and ends at CP 169 MP 169.7 at Hoffmans, New York. This segment has the highest maximum authorized speeds (MAS) on the Empire Corridor, with speeds of up to 110 mph. The higher speeds are, in large measure, due to generally following the Hudson River, which is comparatively straight relative to segments to the south. The higher speeds also reflect extensive investment by New York State since the 1970s.

Empire Corridor West (Albany to Buffalo)

Empire Corridor West extends 294 miles west (MP 143 to 437) from approximately one mile north of Albany-Rensselaer Station to just east of the Buffalo-Exchange Street Station (refer to Exhibit 2-6). This section of track passes through the Mohawk Valley from the Capital District cities of Albany and Schenectady, passing through the central-western New York cities of Utica, Syracuse, and Rochester in the Finger Lakes Region, and Buffalo on Lake Erie. Outside of these metropolitan areas, the railroad also passes through the more rural counties of Montgomery, Herkimer, Madison, Cayuga, Wayne, Monroe, and Genesee.

This section of track is a two-track line that is the busiest freight track in the state, carrying one of the highest volumes on the CSXT system nationwide. This is the only railroad line in upstate/western New York that can accommodate the maximum freight rail car weight (315,000 pounds). The entire line west of Hoffmans (west of Schenectady) also has adequate clearance for trains with double-stack intermodal containers. CSXT operates this as a high-volume railroad that is heavily-used by 50 to 60 freight trains daily. Intermodal transportation uses standardized cargo containers to allow ease of transport by, and transfer between, different modes (freight trains, cargo ships, and freight trucks) without double handling the freight itself. The Albany to Hoffmans segment has very light freight traffic due to freight traffic diverting to Selkirk Yard to the south. The existing corridor, at the time the Tier 1 Draft EIS was published, included a single-track segment between Albany and Schenectady, but has since been doubletracked. There are speed restrictions/slow orders due to track conditions, such as the Livingston Avenue Bridge over the Hudson River, where speed is restricted to 15 mph. Speed restrictions also remain due to grades on West Albany Hill and on the approach to Schenectady. Current operating speeds of up to 79 miles per hour are permitted by the signal system for this shared use corridor, although actual speeds are considerably lower. Speeds are reduced to 30 mph through the downtown Buffalo area.

In 2019, Amtrak operated a total of four daily roundtrips along the Empire Corridor West. Of these four trips, one daily service trip continues from Buffalo-Depew Station to Chicago (Lake Shore Limited). Amtrak operates three daily round trips to Niagara Falls (Empire Service), with one continuing on to Toronto (Maple Leaf Service) (see Exhibit 2-4). In addition to these four trips, two trips offer service to Schenectady, one on the Adirondack Service continuing to Montreal and one on the Ethan Allen Express continuing to Rutland, Vermont.

Leaving Albany-Rensselaer Station, the Empire Corridor curves sharply west to cross the Hudson River on the Livingston Avenue drawbridge, MP 142.9. The line then skirts the northern edge of downtown Albany, and begins the steepest grade on the Empire Corridor, Albany Hill. The grade reaches a maximum of approximately 1.6 percent for about 1.7 miles, climbing from about 30 feet above sea level at the Hudson River to about 200 feet above sea level.



Leaving Schenectady Station, the Empire Corridor curves west and crosses the Mohawk River on a 725-foot-long double-track bridge. The line skirts the northern edge of Scotia and, at MP 168.3, passes under CSXT's Selkirk Subdivision, which curves west after the bridge to parallel the Empire Corridor between the Mohawk River to the south and the Selkirk Division to the north. The Empire Corridor joins CSXT's Selkirk Subdivision at CP 169 (Hoffmans).

The **CSXT Selkirk and Mohawk Subdivisions** extend 127.1 miles from Hoffmans, MP 169.7, to the end of CSXT's Mohawk Subdivision, west of Syracuse at MP 296.8. Empire Corridor West includes all of the Mohawk Subdivision and a short section of the westerly end of the Selkirk Subdivision. The Selkirk/Mohawk Subdivision dividing line is located at MP 175.5 (CP 175 in Amsterdam), 5.8 miles

west of Hoffmans.

The eastern half of this segment closely follows the Mohawk River to Herkimer, where the river turns north to drain part of the Adirondack highlands, resulting in a number of curves that reduces maximum operating speed. West of Herkimer, the railroad follows the New York State Canal System. The landscape becomes less hilly approaching Utica and on to Syracuse. The Mohawk Subdivision ends, and the Rochester Subdivision begins, at MP 296.8, about five miles west of Syracuse Station.

The **CSXT Rochester Subdivision** extends 133 miles from the boundary with the Mohawk Subdivisions, west of Syracuse, and west to the **Buffalo Terminal Subdivision** at MP 429.8. The short, 7.9-mile Buffalo Terminal Subdivision extends to MP 437.7, at which point the **Niagara Subdivision** diverges north.

Leaving Syracuse, the railroad alignment heads almost due west, following a broad, level valley generally drained by the Seneca River. This section has minimal curvature and supports a 79 mph maximum speed for passenger trains. Approaching Savannah, the alignment crosses the Erie Canal at MP 319.30, and the extensive Montezuma Marsh, a wide floodplain of the now narrow Seneca River. All trains are limited to 40 mph due to continual differential settlement of the Seneca River bridge structure at MP 319.7 to 320.1.

Approaching Clyde at MP 328, the railroad encounters a region of hills. With the alignment designed to avoid some of the pronounced ridges, maximum passenger train speed is reduced to as low as 55 mph at Lock Berlin Curve,²⁹ MP 332.6, to 334.0. Sustained 79 mph passenger train operation is not possible until Walworth at MP 361. At Walworth, sustained 79 mph passenger train operation is possible for 7.5 miles to the eastern approaches to Rochester.

Similar to the segment through Syracuse, but shorter in overall length, the rail segment through Rochester features significant freight activity, complex track work, junctions, and reduced speeds (as low as 45 mph for passenger trains). West of Rochester at MP 372.2, the Rochester Subdivision continues west with a straight alignment and fairly level topography, which permits 79 mph for passenger trains operating from MP 372.2 to MP 435.4 (within the Buffalo Terminal Subdivision). The eastern limits of Frontier Yard are accessed at CP 434, which also permits movement to the Belt Subdivision, the primary freight train bypass around the City of Buffalo and the route to the International Railroad Bridge connecting to Ontario, Canada. Passenger train operating speeds, west of MP 435.4 on the Buffalo Terminal Subdivision, are limited to a speed of 60 mph near Frontier Yard and then to 30 mph at MP 436.8. At CP 437, approaching the Niagara Subdivision, passenger trains increase their maximum operating speed to 60 mph, once they clear the interlocking at CP 437, and then follow the governing speed restrictions for this subdivision.

Niagara Branch (Buffalo to Niagara Falls)

The Niagara Branch (CSXT Niagara Subdivision) extends 28 miles north MP 437 (CP 437) and proceeds generally north to Niagara Falls (refer to Exhibit 2-7). This section of track passes through Erie and Niagara counties.

The Niagara Branch is primarily a passenger railroad; since there is a freight bypass route used by CSXT that provides modern clearances for freight service to Niagara Falls (refer to Section 2.3). Maximum passenger speeds over this single- and double-track (formerly all double-tracked), shared

²⁹ Lock Berlin Curve is actually two curves; a reverse curve with some tangent between them. The initial curve outlines an almost a ninety degree angle.

use corridor range from 40 to 60 mph. Impediments to freight movements include a tunnel with a vertical clearance slightly more than 16 feet, which is inadequate for a number of modern railcars, including double-stack containers. The northernmost section of track crosses into Niagara Falls, Canada at the Whirlpool Bridge. The Whirlpool Bridge accommodates the railroad on the upper level and carries highway traffic on the lower level. This bridge is used only for the Maple Leaf service to Toronto, Canada operated by Amtrak and VIA rail (one daily roundtrip), and the freight use that formerly operated on the bridge has been abandoned.



Exhibit 2-7—Niagara Branch

CP 437 is the dividing point of CSXT's Buffalo Terminal Subdivision, CSXT's Niagara Subdivision, the Lake Shore Subdivision, and the Belt Subdivision. CSXT's Belt Subdivision joins from the north and provides a high clearance bypass of downtown Buffalo. The Niagara Branch continues straight toward the shore of Lake Erie, curving to the right and continuing 1.9 miles to Amtrak's Buffalo-Exchange Street Station, which is very close to Buffalo's main business district. It proceeds generally north, through Tonawanda, North Tonawanda to Niagara Falls. Leaving Exchange Street, the Niagara Branch closely parallels Route I-190 along the Niagara River. The right-of-way (ROW) passes through a short tunnel under overhead roadways and is generally confined by many ramps, parallel roadways and I-190 itself. Six miles from its beginning, the track exits the confines of parallel highways at the I-190 and the Scajaquada Expressway (Route 198) interchange. At this location, the Niagara Branch passes junctions with the freight-only Belt Subdivision; most freight trains destined for Niagara Falls rejoin the Empire Corridor at this location.

The Tuscarora Wye (refer to Exhibit 2-7) connects with the Niagara Branch about 5½ miles south of Niagara Falls. Northbound Amtrak trains terminating in Niagara Falls access the wye to pull forward, then reverse (using the other leg of the wye) to back into Niagara Falls Station. This allows the terminating Amtrak trains to be "turned" without the expense of a yard crew. Southbound Amtrak trains do not use the Tuscarora Wye.

2.2. Major Markets Served by the Empire Corridor

The Empire Corridor runs through the population and economic spine of New York State, connecting many of its metropolitan areas. Eighty percent of New York State's 19.4 million residents live within 30 miles of the Empire Corridor. According to the 2019 U.S. Census, New York's six largest metropolitan areas (in order, New York City, Buffalo, Rochester, Yonkers, Syracuse, Albany) lie along this corridor. The Empire Corridor includes nine of the top fourteen most populous cities (Schenectady, 9th largest city; Utica, 10th largest city; and Niagara Falls, 14th largest city). The convenience of efficient rail travel will contribute to the accessibility of these communities, enhancing their economic and cultural vitality and supporting local and regional economic development efforts.

There are eight metropolitan statistical areas (MSAs)³⁰ located along the route, defined around the eight major metropolitan areas extending into New Jersey and Pennsylvania. The total population of the MSAs exceeds the population of the State of New York. The following is a description of the eight MSAs, which are served by nine Metropolitan Planning Organizations (MPOs).

- **New York-Newark-Jersey City, NY-NJ-PA MSA** (also referred to as the **New York-Northern New Jersey-Long Island, NY-NJ-PA MSA**), served by the **New York Metropolitan Transportation Council (NYMTC)**. NYMTC is the state-designated MPO for New York City, Long Island and the lower Hudson Valley and is comprised of the following ten counties: New York, Kings, Bronx, Richmond, Queens, Nassau, Suffolk, Putnam, Rockland, and Westchester.
- **Poughkeepsie-Newburgh-Middletown, NY MSA** served by the **Orange County Transportation Council (OCTC)** and the **Poughkeepsie-Dutchess County Transportation Council (PDCTC)**. The OCTC is the MPO for Orange County, while the PDCTC is the MPO for

³⁰ The general concept of a metropolitan statistical area is that of an area containing a large population nucleus (based on urbanized areas of 50,000 or more population), and adjacent communities that have a high degree of integration with that nucleus. The Metropolitan Statistical Area comprises the central county or counties containing the core, plus adjacent outlying counties having a high degree of social and economic integration with the core as measured through commuting. MSAs serve to group urban areas (and can group together several cities) for population censuses and compilations of related statistical data.

Dutchess County.

- **Kingston, NY MSA**, served by the **Ulster County Transportation Council (UCTC)**. UCTC is the designated MPO for Ulster County.
- **Albany-Schenectady-Troy, NY MSA**, served by the **Capital District Transportation Committee (CDTC)**. CDTC is the designated MPO for the Albany-Schenectady-Troy metropolitan area and is responsible for Albany County, Rensselaer County, Schenectady County, and Saratoga County.
- **Utica-Rome, NY MSA**, served by the **Herkimer-Oneida Counties Transportation Study (HOCTS)**. HOCTS is responsible for the transportation planning in Herkimer and Oneida Counties.
- **Syracuse, NY MSA**, served by the **Syracuse Metropolitan Transportation Council (SMTC)**. SMTC is the state-designated MPO for Onondaga County and small portions of Madison and Oswego Counties.
- **Rochester, NY MSA**, served by the **Genesee Transportation Council (GTC)**. GTC is the MPO responsible for the transportation planning of the Genesee-Finger Lakes Region which includes the following nine counties: Genesee, Livingston, Monroe, Ontario, Orleans, Seneca, Wayne, Wyoming and Yates Counties.
- **Buffalo-Cheektowaga-Niagara Falls, NY MSA**, served by the **Greater Buffalo-Niagara Regional Transportation Council (GBNRTC)**. GBNRTC is the MPO for Niagara and Erie Counties.

The southern terminus of the Empire Corridor, the New York City metropolitan area, is the nation's largest MSA with an estimated population of over 19 million. New York City's labor market totaled 6,193,192 in 2019, comprising 48.1 percent of New York State's employment. In 2019, the gross metropolitan product of the New York metropolitan area (New York-Newark-Jersey City, New York-New Jersey-Pennsylvania MSA) was \$1.861 trillion, larger than the combined gross domestic product of Pennsylvania and New Jersey, and larger than all but one state (California).³¹ This gross metropolitan product represents the largest consumer market in the United States.

The nine MPOs along the route account for approximately 90 percent of the state's total population and employment and form the bulk of the high-speed rail ridership market. The population of the nine MPOs is forecast to be 19,403,664 by 2035. In 2019, the state population totaled 19,453,561. Although population between 2010 and 2019 remained largely the same, the employment for these MPOs increased almost 19 percent. The employment in these MPOs is forecasted to increase 1 percent by 2035 to 11,847,283, thereby continuing to constitute roughly 89 percent of the state's total 2035 projected employment of 13,286,923³².

The regional population and employment projections for the Empire Corridor indicate a strong population and employment base, and a correspondingly strong high-speed rail travel market. These projections do not account for major new infrastructure investments, such as improvements to high-speed rail service described in Chapter 3, which could potentially change the population and employment outlook. For example, according to a U.S. Conference of Mayor's Report, which

³¹ Economic Development Research Group, Inc. *The Economic Impact of High Speed Rail on Cities and their Metropolitan Areas*. Prepared for the U.S. Conference of Mayors (undated), released June 2010; U.S. Bureau of Economic Analysis, GDP/MSA-states, 2016.

³² U.S. Census, 2010 and 2019 were the sources for county population. U.S. Bureau of Economic Analysis was the source for 2010 and 2019 employment, for all MPOs except for the Syracuse Metropolitan Transportation Council. Woods and Poole Economics, Inc. was used for 2035 county population and employment forecasts.

examined the impact of high-speed rail upon the City of Albany, the introduction of high-speed rail along the corridor can contribute substantially to economic growth by driving higher-density, mixed-use development at train stations; expanding visitor markets and generating additional spending; broadening regional labor markets; and supporting the growth of technology clusters.³³

The Buffalo-Niagara region is an important gateway for international trade. According to the U.S. Bureau of Transportation Statistics, the Buffalo-Niagara region was the third busiest international trade crossing by land in the nation in 2000, behind Texas and Michigan.³⁴ The four highway bridges and two rail bridges across the Niagara River comprised the second busiest commercial border crossing of the entire Canada-U.S. border.³⁵ Of the four international highway bridges across the Niagara River, only two are used for commercial traffic. Currently, one rail bridge crosses the river with freight trains using the International Rail Bridge between Black Rock, New York and Fort Erie, Ontario. The Whirlpool Bridge carries the Amtrak New York City to Toronto train and connects to VIA RAIL Canada. In the past, a third crossing via the suspension bridge traversed the Niagara River between the United States and Canada. It was removed from service as part of a grade elimination project in Niagara Falls, Canada. According to the New York State Rail Plan (2009), the Buffalo and Niagara crossings into Canada (including highway freight) accounted for 60 percent of imports from Canada through the New York State border crossings (worth an estimated \$37.9 billion) and 73.4 percent of U.S. exports (worth an estimated \$32.5 billion) in 2005. Of this, rail accounted for 16.6 percent (or \$6.3 billion) of imports and 4.7 percent (or \$1.5 billion) of exports through the Buffalo and Niagara crossings.³⁶ A Greater Buffalo-Niagara Regional Transportation Council study of freight estimated that in 2006, \$7.1 billion (or 5.1 million tons) of Canadian imports traveled via rail through the Port of Buffalo-Niagara Falls into the U.S., and \$1.8 billion of goods were exported in the same year.³⁷ Approximately one-fourth of the international trade with Canada occurs at the highway border crossings located along the Niagara River. In 2010, the Port of Buffalo-Niagara Falls had the third highest ranking for trade value of rail crossing ports into Canada in the U.S., accounting for \$7.2 billion of imports and \$2.8 billion of exports.³⁸

2.3. Freight Operations

Empire Corridor West (from Hoffmans) carries 50 to 60 daily freight trains (refer to Exhibit 2-8), one of the highest volumes on the entire CSXT system. CSXT operates upwards of 80 local freight trains per week and close to 450 through freight trains per week along this segment.³⁹

This section of track is the only railroad line in upstate/western New York that can accommodate the maximum freight rail car weight (315,000 pounds). There is a wide range of freight trains, with the single largest category being intermodal trains that carry double-stack containers to and from East Coast ports (refer to definition of intermodal transportation in Section 2.1.2). Some intermodal trains

³³ Economic Development Research Group, Inc. *The Economic Impact of High Speed Rail on Cities and their Metropolitan Areas*. Prepared for the U.S. Conference of Mayors (undated), released June 2010.

³⁴ U.S. Bureau of Transportation Statistics, North American Transborder Freight Data, "Top 104 Ports/Districts by Trade Value (U.S. Dollars) (Ranked by Total Trade) for U.S.-Canada Partner Trade by Rail: Buffalo-Niagara Falls, New York." Accessed October 12, 2011.

³⁵ Ontario Ministry of Transportation and NYSDOT, *Bi-National Transportation Strategy for the Niagara Frontier*, December 2005.

³⁶ NYSDOT, *New York State Rail Plan – Strategies for a New Age*, 2009.

³⁷ Wilbur Smith Associates, *Niagara Frontier Urban Area Freight Transportation Study, Technical Memorandum No. 5: Economic Impact Analysis, Project No. 06 Freight*. Prepared for the GBNRTC, Updated June 2010.

³⁸ U.S. Bureau of Transportation Statistics, North American Transborder Freight Data, "Top 104 Ports/Districts by Trade Value (U.S. Dollars) (Ranked by Total Trade) for U.S.-Canada Partner Trade by Rail: Buffalo-Niagara Falls, New York." Accessed October 12, 2011. <http://www.bts.gov/programs/international/transborder/TBDR_QuickSearch.html>

³⁹ LTK Engineering Services. Rail Network Operations Simulation Results. Prepared for NYSDOT. June 2012.

also carry “piggyback” highway trailers on flat cars. Other train types include enclosed automobile “racks” from final assembly plants; coal trains for electric generating plants; garbage trains from New York City and other locations; and general merchandise trains carrying lumber, chemicals, grain, fertilizer, plastics, propane, and other commodities.

The busiest segment of the CSXT freight operations (Buffalo-Rochester) handled about 85 million gross tons (mgt) of freight per year in 1997, increasing to about 110 mgt in 2007. This reflects an annual growth of about 2.5 percent. CSXT’s Niagara Branch handles approximately 10 to 20 mgt of freight per year. Although corridor-specific figures are not available, the recession severely affected freight traffic. For the CSXT system, as a whole, volume tonnage declined by about 17 percent from 2008 to 2009, rebounding by about 9 percent from 2009 to 2010.

Most freight trains on the Empire Corridor continue west from Buffalo on the CSXT Lake Shore Subdivision/Chicago Line that passes along the south shore of Lake Erie. CSXT interchanges freight with Canadian National Railway and Canadian Pacific Railway in the Buffalo area.

Exhibit 2-8—2019 Weekday Train Frequencies on Empire Corridor

Service	Empire Corridor South South of Albany-Rensselaer		Empire Corridor West West of Albany-Rensselaer	
	Outbound (to Albany)	Inbound (to New York City)	Outbound (to Buffalo-Depew)	Inbound (to Albany)
Passenger Rail (Amtrak)	To Albany	From Albany	From Albany	To Albany
	13	13	4 (6 from Schenectady)	4 (6 to Schenectady)
Commuter (Metro-North)	To Poughkeepsie*	From Poughkeepsie	N/A	
	32	32		
	Terminating at Croton-Harmon or Points South	Originating at Croton-Harmon or Points South		
	55	52		
	Total Outbound 87	Total Inbound 84		
Freight (CSXT)	4		50 – 60 (west of Hoffmans)	

* One of the 32 trains terminates at Beacon, just south of Poughkeepsie.

Source: Amtrak Empire Service: New York, Albany, and Buffalo, NRPC Form W8, June 30, 2019; Metro-North Railroad Hudson Line Timetable, effective June 30 through September 28, 2019.

Local CSXT freight trains operate to Niagara Falls, serving industries and power plants in that area. Although the CSXT and Canadian National freight networks formerly connected via the Whirlpool Bridge in Niagara Falls, freight trains do not regularly use this routing. On the east, CSXT freight trains diverge from the Empire Corridor at Hoffmans, operating to the large classification (sorting) yard at Selkirk, south of Albany.

From Selkirk Yard, the majority of the freight trains operate south via the CSXT River Line (former West Shore Railroad) to New Jersey, while others operate east to connect with the Boston & Albany Line to Springfield, Worcester, and Boston, Massachusetts. Two freight trains cross the Hudson River, then access Empire Corridor South at Stuyvesant to travel to Poughkeepsie and the New York City area, where connections are made with the Long Island rail freight network.

The CSXT Buffalo Terminal area, located at the western end of the Empire Corridor, is a major hub for international rail movements and is used by all four major Class I railroads⁴⁰ in the eastern U.S. (CSXT, Norfolk Southern, Canadian National, and Canadian Pacific), each with its respective terminal facilities, classification yards, interchange, and mainline tracks. The Empire Corridor only accommodates one of these Class I railroads (CSXT), although the Mohawk, Adirondack & Northern Railroad holds trackage rights to operate between Utica and Rome on CSXT tracks.

CSXT has a freight bypass around Rochester to the south, the 23.5-mile-long single-track West Shore Subdivision. This bidirectionally-signaled line diverges east of Rochester at MP 359.2 and rejoins the Rochester Subdivision at MP 382.6, west of Rochester. Freight trains that do not stop at Rochester, such as intermodal, automotive, unit coal, and grain trains, use this slightly shorter, uncongested route on an as-needed basis.

The CSXT River Line, which parallels the Empire Corridor, operates as a north-south freight line along the west side of the Hudson River with connections to Albany. The River Line, a single-track freight line, is used as CSXT's principal intermodal route, along with the Chicago Line (Empire Corridor West), between the Port Authority of New York & New Jersey and Chicago. The "Castleton Cut-off" route that connects the River Line at Selkirk Yard with the Empire Corridor at Stuyvesant and the Boston & Albany Line is the closest freight rail crossing of the Hudson River to New York City, and, at 125 miles north of the city, the closest connection to points west of the river.

CSXT recently changed Selkirk Yard from a hump classification yard to a flat switch facility. Selkirk remains as the focal point for rail freight service through the Albany-Schenectady area, as well as the operational control point for all CSXT operations in the corridor. Appendix E provides additional descriptions of other service yards.

Empire Corridor South has a capability of accommodating the second highest rail car weight limit class (286,000 pounds) for freight. CSXT freight traffic on Empire Corridor South is considerably lighter than freight traffic west of Hoffmans. Freight service on the Hudson Line consists of through freight limited to a nighttime window, as per agreement between Metro-North and CSXT, and several locals (four) per day. Within the southern portion of the line within Metro-North territory, there are some moves during the day, but they are minor and performed within scheduled time slots. Freight service on the Hudson Line is constrained by the high volume of Metro-North commuter rail traffic and nonstandard clearances at bridges over the rail line. As previously noted, much of the freight traffic is routed down CSXT's West Shore Line to northern New Jersey, rather than into New York City, where congestion and a lack of modern freight rail yards hamper deliveries (with the exception of shippers with their own sidings).

2.4. Commuter Rail Operations

The Empire Corridor South is heavily used for commuter rail by Metro-North Railroad, the second busiest commuter railroad in the nation (refer to Exhibit 2-8). South of Poughkeepsie Station, Metro-North operates Hudson Line commuter service into Grand Central Terminal. Key ridership and on-time performance (OTP) statistics are summarized in Exhibit 2-9.

The growing ridership base on the Hudson Line increased 35 percent over the 15 years prior to 2010,

⁴⁰ Class I railroads are defined by the Surface Transportation Board as having annual operating revenues of \$250 million or more in 1991 dollars.

an average of 2.3 percent a year.⁴¹ Over these 15 years, Hudson Line commuter rail ridership had increased by roughly 4 million, to 15.7 million annually in 2010. Since 2010, commuter rail ridership has increased 11 percent, an average annual increase of 1.2 percent, to reach 17.4 million annually in 2019.

Poughkeepsie (MP 73.5) marks the northernmost extent of the Metro-North territory along Empire Corridor South (MPs 0 to 142) for the Hudson Line service, and the Croton-Harmon Station demarcates the other major service stop midway along the line (MP 33.2). South of Croton-Harmon Station, only three of the four lines are electrified with third rail, so the non-electrified track serves Amtrak, freight service, and Metro-North diesel service (which is different than express service). Four tracks typically carry two express and two local tracks in each direction that service closely spaced suburban stations.

The Metro-North Hudson Line runs as a double-track line to Poughkeepsie, with some three-track sections. Three track sections extend between Croton-Harmon to Peekskill (CP 35 to CP 39), at Beacon (CP 58 to CP 61), and at Poughkeepsie (CP 72 to CP 75).

Exhibit 2-9—Metro-North Ridership and OTP, 2010 and 2019

	2010	2015	2019
On-time Performance System-wide	97.5%	93.5%	95%
Hudson Line Ridership	15.7 million	16.4 million	17.4 million

In 2019, Metro-North Hudson Line commuter rail service consisted of:

- On weekdays, 87 revenue trains originated from and 84 terminated at New York City Grand Central Terminal (GCT), for a total of 171 trips each weekday.
- On weekends, Metro-North operated 53 trips to and from GCT (with 6 additional trips on Saturdays each way), for a total of 106 to 118 trips to and from GCT each day.
- Roughly half of the trips were express or limited express trains to Poughkeepsie (29 outbound and 30 inbound on weekdays and 22 inbound and outbound on weekends).

Most of the trains are express, or limited express trains, with other trains operating as local shuttle trains to Croton-Harmon only. On weekdays, three late night/early morning inbound trains and one outbound train operate as shuttle trains making all stops between New York City and Poughkeepsie. On the weekends, two late-night shuttles operate inbound from Poughkeepsie making almost all stops, with one outbound late-night shuttle.

⁴¹ Anders, Marjorie, MTA, "RE: New York State High Speed Rail Project-Metro-North Hudson Line Ridership Information," email/personal communication with HNTB Corporation, October 28, 2011, updated with annual 2011-2019 MNR ridership reports .

2.5. Intercity Passenger Rail Operations

This section describes reliability/on-time-performance (OTP), travel times, schedule frequency, and ridership for Amtrak’s intercity passenger rail service on the Empire Corridor.

2.5.1. Reliability

Reliability, or OTP, is the consistency of service in terms of both travel times and adherence to published schedules. Inadequate reliability adds to total travel time because passengers are forced to select earlier departure times to allow sufficient time for potential delays.

Poor OTP and long travel time can result in a negative impact on ridership for Empire Corridor passenger rail service. A train that is 10-minutes late is reported the same as a train that is three hours late, yet the latter has a much more severe impact because it is likely to result in passengers selecting other modes for future travel. The program objectives for Empire Service include improving system-wide OTP to at least 90 percent.

The metrics Amtrak uses for OTP have evolved over time. The customer on-time performance (OTP) is the percentage of all customers on an intercity passenger rail train who arrive at their detraining point no later than 15 minutes after their published scheduled arrival time, reported by train and by route. The “All Stations OTP” accounts for timeliness at all station arrivals (rather than just end points). A more detailed review of endpoint OTPs (2017) for Empire Corridor service and routes by schedule is presented in Appendix E.

For Amtrak’s current rating of its routes, 80 percent is considered to be a “passing” grade. In 2019, Amtrak rated the OTP for Empire Service between New York to Albany as 91 percent of on-time customers (where customers arrive within 15 minutes) and the OTP for the full Empire Service operating between New York to Niagara Falls OTP was only 66 percent of on-time customers (a failing grade). Of the other routes operating on Empire Corridor, only the Ethan Allen Express received a passing OTP of 85 percent. The Adirondack had a 2019 customer OTP of 73 percent, the Maple Leaf had an OTP of 67 percent.

Exhibit 2-10—2019 OTPs for Empire Service between Niagara Falls and NYC and Other Routes

Train	All-Stations OTP		Customer OTP		Ave. Minutes late per late Rider	
	Current Month	Most Recent 12 Months	Current Month	Most Recent 12 Months	Current Month	Most Recent 12 Months
Empire	78.4%	80%	76.8%	80.3%	45	41
New York-Albany	94.3%	94.3%	89.6%	91.1%	42	35
New York-Niagara Falls	65.7%	68.9%	61.8%	66.4%	42	42
Adirondack	71.2%	73.2%	68.3%	73.1%	54	46
Ethan Allen Express	84.6%	89.6%	79.2%	84.9%	32	34
Maple Leaf	68.3%	67.9%	59.5%	66.8%	57	47

Source: Host Railroad Report, Amtrak Train Performance on Host Railroads, preliminary released for informational purposes, December 2019.

As shown in Exhibit 2-10, only the New York to Albany service operates at optimal OTPs of approximately 90 percent or better. Overall OTPs for a year period on Empire Service was approximately 80 percent, but the Niagara Falls service from and to New York experienced OTPs between 62 to 69 percent.

Amtrak routinely collects information on the causes of train delays, which are frequently due to host/owner railroad issues. Exhibit 2-11 summarizes the common causes of delays and minutes of host-responsible delay on the Empire Corridor. The threshold for Amtrak's 80 percent OTP goals correlates to 900 host-responsible delay minutes per 10,000 train miles. These thresholds are shown in bold in this exhibit. The delays shown are normalized by train mile so that the delays for each operator are divided by the train miles operated by that operator, then multiplied by 10,000 train miles. Delays associated with CSXT operation on Empire Corridor West and Metro-North operations on Empire Corridor South exceed the Amtrak target on an annual basis. On the New York to Niagara Falls Empire Service, the average delays per late rider in 2019 attributed to CSXT totaled 1,043 minutes, or 17.4 hours (per 10,000 train miles). On the New York to Albany Service, the average minutes late per late rider in 2019 attributed to Metro-North totaled 947 minutes, or 15.8 hours (per 10,000 train miles).

Exhibit 2-11—2019 Minutes of Delay per 10,000 Train Miles by Host for Empire Service

Train	Host	Total Host Responsible Delays		Largest Two Delay Categories				Route Miles
		Current Month	Most Recent 12 Months	#1		#2		
Empire								
New York-Albany	Amtrak	237	231	DCS	93	PTI	78	81
	MNRR	844	947	CTI	570	RTE	123	64
New York-Niagara Falls	CSX	1035	1043	FTI	402	RTE	311	296
	Amtrak	242	329	DCS	118	PTI	71	109
	MNRR	822	1364	CTI	503	DMW	119	64
Adirondack	CN	3523	4021	DSR	2254	RTE	744	49
	CP	687	767	PTI	466	FTI	94	178
	Amtrak	154	329	PTI	81	DCS	32	100
	MNRR	820	921	CTI	499	RTE	137	64
Ethan Allen Express	CP	507	675	PTI	359	DCS	35	60
	Amtrak	507	430	PTI	301	DCS	85	100
	MNRR	1061	1316	CTI	496	DMW	279	64
	VTR	0	274		0		0	24
Maple Leaf	CSX	1284	1261	FTI	649	RTE	341	298
	Amtrak	263	304	PTI	167	DCS	41	109
	MNRR	743	966	CTI	468	RTE	148	64

Note: DCS=delay signals, CTI=commuter train interference, FTI=freight train interference, PTI=passenger train interference, RTE=routing, DMW=maintenance of way.

Source: Host Railroad Report, Amtrak Train Performance on Host Railroads, preliminary released for informational purposes, December 2019.

2.5.2. Travel Times

Travel time is a component of a total trip between origin and destination and is often another determining factor in mode choice. A number of factors affect total trip time, including distance, wait time for a train, OTP, and average delay, as well as access and egress.

Rail travel from New York City to Albany-Rensselaer Station has a scheduled run time of 2 hours 30 minutes (2:30). The total trip time, which includes access time, wait time, haul time, and egress time, is estimated to be 3 hours 10 minutes (3:10). When considering total travel times, rail trip times are competitive with automobile, bus, and air travel between New York City and Albany.

Rail trip times are considerably slower in the Penn Station to Niagara Falls segment, and, as a result, rail travel is not competitive with other travel modes. Passenger rail travel time from New York City to Buffalo-Exchange Street is 8 hours and 18 minutes (8:18), with a total trip time (access/egress, wait, and haul time) of approximately 9:50. The long trip-time is a contributing factor in discouraging the use of the rail corridor to travel between key cities such as Buffalo and New York City.

2.5.3. Schedule Frequency

Schedule frequency represents the range and uniformity of departure times offered in train schedules, and it is a critical determinant of mode utilization. With automobile trips essentially offering unlimited frequency, an attractive rail service must offer a range of departure times throughout the day to provide passengers with multiple choices. It is preferable that rail services operate on “clockface” schedules which offer near-uniform intervals between departures, such as at 10 minutes after each hour. Passengers find these clockface schedules easier to remember and particularly attractive.

In 2019, Empire Corridor Service between New York and Albany-Rensselaer consisted of thirteen (13) daily weekday roundtrips (with 11 weekend roundtrips), while service between Albany-Rensselaer and Buffalo-Depew had a frequency of just four (4) roundtrips per day (refer to Exhibit 2-8). Of the four daily trains, three of the westbound trains provided service to Niagara Falls, and three of the four eastbound trains provided service from Niagara Falls.

Overall, service is modest, particularly for Empire Corridor West. The lack of service directly limits the market potential for rail relative to the other transportation modes serving this corridor. Use of rail service between New York City and Buffalo, as well as other cities along Empire Corridor West, is predominantly limited to leisure travel or multi-day business trips.

Despite rail’s competitive travel time from New York City to Albany, the first daily train does not arrive in Albany until 9:50 a.m., slightly later than ideal for business travelers. A one-way trip between Albany-Rensselaer Station and Buffalo had a scheduled travel time of approximately five hours or greater. As shown in Exhibit 2-12 and Exhibit 2-13, it is not possible to travel by passenger train from Albany-Rensselaer to Buffalo for a day trip. The earliest daily westbound train arriving in Buffalo-Depew Station from Albany-Rensselaer arrives at 3:01 p.m., while the latest daily eastbound train departed from Buffalo (Exchange Street) departs at 12:55 p.m. (daily) or 3:37 p.m. (Sundays). The service also does not serve peak direction trips between cities, as there are no scheduled eastbound trains between Buffalo and Albany-Rensselaer that arrive in Albany-Rensselaer before 9 a.m. The limited service between Albany-Rensselaer and Buffalo is insufficient to attract travelers who have other transportation options, such as auto, bus or air, that provide them with greater

flexibility in scheduling their travel.

Exhibit 2-12—2019 Daily Westbound Train Schedule: Albany-Rensselaer to Buffalo-Depew

Service Trains	Departure Albany-Rensselaer, NY	Arrival Buffalo-Depew, NY	Scheduled Trip Time (hours: minutes)
63 Maple Leaf	10:00 a.m.	3:01 p.m.	5:01
281 Empire Service	1:00 p.m.	6:03 p.m.	5:03
283 Empire Service	4:00 p.m.	9:02 p.m.	5:02
49 Lake Shore Limited	7:05 p.m.	11:59 p.m.	4:54

Source: Amtrak Empire Service: New York, Albany, and Buffalo, NRPC Form W08, 11/11/201911

Exhibit 2-13—2019 Daily Eastbound Train Schedule: Buffalo-Depew to Albany-Rensselaer

Service Trains	Departure Buffalo-Depew, NY	Arrival Albany-Rensselaer, NY	Scheduled Trip Time (hours: minutes)
280 Empire Service	4:46 a.m.	9:41 a.m.	4:55
284 Empire Service	7:41 a.m.	12:37 p.m.	4:56
48 Lake Shore Limited	8:51 a.m.	2:25 p.m.	5:34
64 Maple Leaf	1:09 p.m.	6:39 p.m.	5:30
Notes: Train 280 does not operate on Sunday, but other trains offer service at or around the same times.			

Source: Amtrak Empire Service: New York, Albany, and Buffalo, NRPC Form W08, 11/11/2019

2.5.4. Ridership

From 2011 to 2019, ridership along the Empire Corridor (excluding Lake Shore Limited, Adirondack, and Ethan Allen Express services) increased from 1.4 million to 1.6 million, which represents an average increase of 1.4 percent per year over this time period. From 2002 to 2011, ridership increased more sharply from 1.04 million at an average rate of approximately 3.7 percent a year. Most significantly, the increase along Empire Corridor West accounted for a greater proportion of this rise, with ridership increasing 111 percent from 2002 to 2011. Intercity passenger rail ridership increased 23 percent between Albany-Rensselaer and Niagara Falls from 2007 to 2008, and increased 50 percent from 2003 to 2008.⁴² These percentage increases represent an average over these time periods, but ridership changes have not been linear. The largest total annual increases in the Empire Corridor ridership (more than an additional 100,000 passenger trips per year), occurred in the years 2005, 2008, 2010, and the second largest annual increases in ridership occurred in 2011 (62,313), 2014 (58,531), and 2019 (87,367). In some years, increases were relatively small in 2013 (1,328), 2017 (1,715), and 2018 (5,194), and annual ridership decreased in 2009 (-83,605) and 2016 (-46,236).

Exhibit 2-14 presents a summary of rail ridership among the 15 major market pairs in 2009. NYSDOT

⁴² NYSDOT. *New York State Rail Plan*. 2009.

obtained rail ridership data by analyzing the origin-destination data obtained from Amtrak. The data were sorted by station pairs, which provided the ridership between the discreet station pairs and the total boardings at each station. The major travel markets at stations along Empire Corridor appear to remain unchanged over time. Comparison of boardings and alightings from Empire Corridor Amtrak stations (see Exhibit 2-15) indicates that the proportion of station passenger use remained essentially unchanged between fiscal years 2010 and 2019 (less than 1% change at each station over this time period).

The greatest number of boardings, 45 percent, involved travel to and from New York City. Albany was the second most popular origin/destination city, with 37 percent of the total market share. The major market share of any one city then declined substantially, with the Buffalo market comprising 6 percent, the next largest major market share. The most frequent market pair, the New York City-Albany market, constituted 34 percent of the entire 2009 rail market. Although the New York City-Buffalo market had the second greatest number of boardings, it totaled only 3 percent of the entire Empire Corridor rail market, as did the New York City to Syracuse market. Along Empire Corridor West, the Albany-Buffalo market comprised only 1 percent of the rail market.

Exhibit 2-14—2009 Major Market to Market Boardings

Trip Origins	Trips Destinations						Total
	NYC	Albany	Utica	Syracuse	Rochester	Buffalo	
NYC	-	320,155	19,858	29,787	23,427	29,881	423,108
Albany	320,155	-	2,082	7,013	8,224	11,133	348,607
Utica	19,858	2,082	-	819	1,421	2,480	26,659
Syracuse	29,787	7,013	819	-	1,794	6,466	45,878
Rochester	23,427	8,224	1,421	1,794	-	1,862	36,728
Buffalo	29,881	11,133	2,480	6,466	1,862	-	51,821
Total	423,108	348,607	26,659	45,878	36,728	51,821	932,801

Source: Amtrak

The 15 major travel market pairs are: New York City (NYC)-Albany; NYC-Utica, NYC-Syracuse, NYC-Rochester, NYC-Buffalo; Albany-Utica; Albany-Syracuse; Albany-Rochester; Albany-Buffalo; Utica-Syracuse; Utica-Rochester; Utica-Buffalo; Syracuse-Rochester; Syracuse-Buffalo, Rochester-Buffalo.

While trip time and cost are perhaps the most important characteristics when evaluating ridership levels among travel modes, frequency of service and OTP are also critical determinants. For example, service between city pairs along Empire Corridor West have similar distances and travel times, and competitive fares among rail, bus and auto. Between Syracuse and Rochester, where air travel is not available, rail service has a superior travel time and cost as compared to bus service.

Rail represents a fraction of travel between Rochester and Syracuse, however (approximately 1,800 rail trips versus more than 92,000 bus trips in 2009). Service frequency and OTP are the major determinants for this city pair; rail service offers only 4 roundtrips between the two cities and an OTP of less than 60 percent, whereas bus service offers 24 trips between Syracuse and Rochester with an approximate 85 percent OTP.

Currently, rail does not capture a significant share of any city pair market along Empire Corridor West due to its significantly less frequent service and its poor OTP. Poor OTP effectively adds to

travel time and eliminates business travel, as travelers cannot take a chance on the mode of travel not arriving at their destination around their scheduled time. Empire Corridor West has historically low OTP and extended average delay times, particularly during peak travel hours.

2.5.5. Stations and Parking

There are 16 existing stations with Amtrak service located in metropolitan areas along the Empire Corridor, in addition to 24 other stations serviced by Metro-North along the route segment south of Poughkeepsie. Exhibit 2-15 presents the Amtrak stations, and the boardings and alightings occurring at each station, in FYs 2010 and 2019. Empire Corridor stations comprised 98.6 percent of total New York State station usage in FY 2010, which totaled 10,276,419 passengers. In FY 2019, Empire Corridor stations comprised 99.2 percent of total New York State station usage, which totaled 13,023,212 passengers. (Note that more than 80 percent of passengers in FY 2010 and 84 percent of passengers in FY 2019 used Penn Station, but not necessarily for Empire Corridor service.) Empire Corridor station boardings and alightings increased by 2,799,525 between 2010 and 2019, an increase of 27.4 percent.

Exhibit 2-15—2010 and 2019 Empire Corridor Amtrak Station Boardings and Alightings

Station	Boardings & Alightings FY 2010	Boardings & Alightings FY 2019	Distance between Stops (mi)
Pennsylvania (Penn)	8,377,944	10,811,323	-
Yonkers	20,433	32,109	14
Croton-Harmon	41,570	46,403	18
Poughkeepsie	75,775	109,877	41
Rhinecliff	158,534	211,139	15
Hudson	150,197	237,268	25
Albany-Rensselaer	737,259	806,960	28
Schenectady	56,125	62,180	18
Amsterdam	9,174	11,183	17
Boehlert Transportation Center at Union Station (Utica)	61,108	63,968	60
Rome	9,100	6,924	14
William F. Walsh Regional Transportation Center (Syracuse)	139,175	131,515	40
Rochester	128,935	132,434	80
Buffalo-Depew	111,513	107,780	60
Buffalo-Exchange Street	30,171	43,384	8
Niagara Falls International Railway Station and Transportation Center	27,270	34,965	27

Sources: New York State Rail Plan, 2009, page 94; Amtrak Government Affairs, "Amtrak Fact Sheet: Fiscal Year 2010, State of New York." November 2010; "Amtrak Fact Sheet: Fiscal Year 2019, State of New York."

Several of the passenger stations, including those in Amsterdam and Buffalo-Exchange Street, are physically obsolete and have experienced deferred maintenance, contributing to the overall perception that passenger rail service along Empire Corridor West is not an attractive, convenient,

or reliable travel option. The following is a description of the stations along the Empire Corridor. Parking at each station was estimated based on information provided by the owner, if available, or Amtrak and/or review of aerial photography (for surface parking). Separate NEPA environmental reviews have been performed for station work using federal funding discussed below. Each station project has independent utility from the Empire Corridor program and would/will improve passengers experience using the system with or without eventual corridor improvements.

Pennsylvania (Penn) Station in New York City (Exhibit 2-16) is the busiest station in the nation, and is owned by Amtrak. The station features 21 station tracks, 11 platforms, four interlockings, and two passenger concourse levels. In 2019, approximately 600,000 passengers a day passed through Penn Station. In addition to Amtrak operations, the station is used by the commuter rail operations of the Long Island Rail Road and the New Jersey Transit Corporation (NJ TRANSIT), both of which share tracks with Amtrak. Together, these three carriers operated over 1,300 weekday trains at Penn Station in 2019.

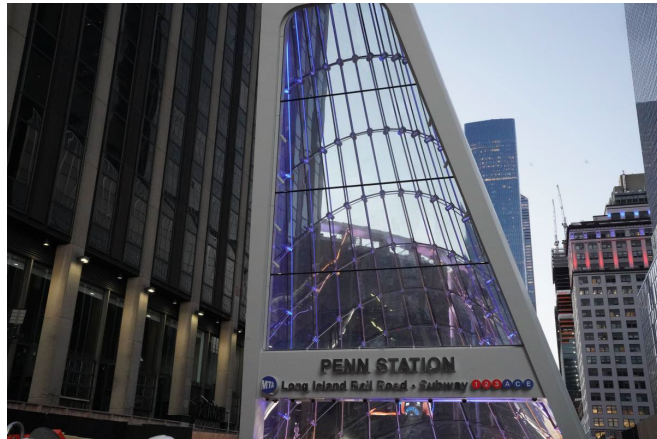


Exhibit 2-16—Pennsylvania Station

The current station site has been in place since 1910, originally designed in the iconic Beaux-Arts style by McKim, Mead, and White. With station demolition in 1963, a reconstruction of the station's public areas was completed in 1968, resulting in the current underground station facility. Prior to a series of major track and switch renewal projects in 2017 and 2018, the track level of the station remained substantially as it was constructed in 1910, though some track and platform reconfiguration had also taken place since then to accommodate longer commuter rail trains. The station has no public parking facilities, though numerous Manhattan parking facilities are located nearby.

Moynihan Station expands the Penn Station rail functions across 8th Avenue into the historic James A. Farley Post Office Building, part of a mixed-use redevelopment of the entire block. The Moynihan Station Project was reconstructed in two phases. A groundbreaking for Phase I of the Moynihan Station, located across Eighth Avenue from Penn Station in midtown Manhattan, was held on October 18, 2010. Phase 1 included expansion and enhancement of the 33rd Street Connector between Penn Station and Moynihan Lower (West End) Concourse. This included extension and widening of this concourse to serve nine of Penn Station's eleven platforms, new vertical access points and circulation space, new entrances into the new concourse at the 31st and 33rd Street corners of the Farley Building, and an emergency ventilation system. The U.S. Department of Transportation provided \$83 million in Transportation Investment Generating Economic Recovery Grants (TIGER) funded through ARRA to increase passenger access, streamline rail operations, and implement other building improvements. In 2012, FRA also awarded Moynihan Station a \$30 million High Speed Rail Grant for the underground connecting corridor construction and the first portion of the new emergency ventilation system. Subsequent phases included a new recently completed \$1.6 billion Moynihan Train Hall (above the connector) in the historic Farley Post Office Building and the recently opened East End Gateway to Penn Station at 33rd Street and 7th Avenue (opened to the public December 31,

2020 and January 1, 2021). The project improves passenger connections between Penn Station and Moynihan Station and ultimately will renovate Penn Station itself. Demolition of the post office building prepared the site for the new 255,000 square foot train hall. The overall redevelopment will include 700,000 square feet of mixed use development featuring commercial, retail, and dining venues. When completed, the \$2.5 billion program includes this redevelopment in the main building and its annex (between Eighth and Ninth Avenues bordered by 31st and 33rd Streets), as well as the renovation of the Seventh and Eighth Avenue subway stations.

Yonkers Station, built in 1911, serves the downtown area of Yonkers via the Metro-North Hudson Line. It is an express station that, in addition to Amtrak Empire Corridor service, serves Metro-North passengers from GCT in Manhattan. It has two high-level island platforms and four tracks. The facility is owned by Metro-North, and parking is owned by the Yonkers Parking Authority. The Beaux-Arts style terminal building was renovated by Metro-North in 2004. The parking garage accommodates 610 spaces that are shared with Metro-North commuters. Yonkers is an inner-ring suburb of New York City, and the station connects the high density inner-ring suburbs to the Empire Corridor, allowing patrons to access Amtrak without having to travel to New York City.

Croton-Harmon Station, also part of the Metro-North Hudson Line, is the main transfer point for local and express commuter rail service. The station is served by most Amtrak Empire Corridor trains, with only a few express trains skipping the station. There are three center island platforms at the station. In 2016, a \$3.6 million project for station renovations streamlining the station layout and improving the customer waiting area was completed. The parking facility accommodates 2,503 spaces, which are shared with Metro-North commuters. The station marks the end of the electrified territory from GCT and is the site of major shop facilities for Metro-North. Uses around the station include a rail layover facility on the west side of the tracks, as well as a Westchester County Park. Croton Harmon Station serves a similar purpose as Yonkers Station, except that it is a catchment area for a larger region of outer-ring rural and small town markets.

Poughkeepsie Station, modeled after GCT, is a Beaux-Arts style terminal with an overhead walkway connecting to a parking garage. Poughkeepsie Station and the parking garage are owned by Metro-North. Improvements to this historic station, built in 1918, were made in 2002 and included enhanced connectivity to the city's Main Street and a large commuter parking garage. The station is equipped with a high-level center island and side platforms, accessing three tracks. Parking spaces at Poughkeepsie Station total 1,123. These spaces are shared with commuters, so that only a portion may be available for Amtrak patrons, dependent on time of day.

Rhinecliff Station, constructed in 1914 in the hamlet of Rhinebeck, serves northern Dutchess County and the Kingston area across the Hudson River. The station experienced the third highest Amtrak boardings/alightings in the state in FY 2017 and is frequented by longer distance commuters using Amtrak service. The station is owned by Amtrak, with parking owned and leased by Amtrak, the station has one center island, low-level platform that serves both tracks. A new high-level platform, accessible bathrooms, repairs to the station and upgrades to the ticket counter, and two new elevators are among the improvements planned at the Rhinecliff rail station. Work recently completed for ADA compliance in 2020 included improvements to the stairs. There are 183 parking spaces available.

Hudson Station, built in 1874, is the oldest operating passenger rail station in the state of New York. Owned by Amtrak, with parking owned by Amtrak/City of Hudson, the Hudson Station has two short, low-level platforms, with access to the normally southbound platform requiring passengers to cross

the normally northbound track at grade. A “one train at a time” rule ⁴³ is enforced at the station because of the necessity for passengers to cross the track closest to the station building to board trains on the outside track. Even though there are two physically separate tracks at Hudson Station, there is only one common platform for passengers to use to board trains on both tracks. In the late 1990s, parking demand led to opening a new lot across the street, and in 2009, the city created metered parking on Front Street. There are 185 parking spaces at the station. Improvements completed in 2016 to 2017 include parking lot lighting, new fencing, brick paving, paving of the employee parking lot, and striping. This work included ADA improvements (interior and exterior) and bathroom remodeling.

Albany-Rensselaer Station, with the second highest boardings/alightings in the state, was the ninth busiest station in the Amtrak system nationally in FY 2018. The station is located in Rensselaer, 1.5 miles from downtown Albany (Exhibit 2-17). Prior to the 1971 advent of Amtrak, intercity passenger trains operated out of the historic Union Station in downtown Albany; however, the use of Union Station was abandoned in 1968 as a cost-cutting move by Penn Central Railroad and the facilities were moved to Rensselaer.



Exhibit 2-17—Albany-Rensselaer Station

The station is a large, newer intermodal facility owned and constructed by the Capital District Transportation Authority (CDTA) in 2002, replacing two terminal buildings constructed in 1968 and 1980. The station has three tracks and two mostly high-level center island platforms. The easterly platform services only one track on the west. The track bay on the east, between platform and station, is currently vacant but was designed to accommodate a planned fourth station track. The station accommodates 1,400 spaces in a parking garage and surface parking immediately adjacent to the station.

Amtrak and NYSDOT completed demolition of the previous terminal facilities in February 2011 to accommodate construction of a fourth track at Albany-Rensselaer Station. The fourth track is now in service, and the project includes platform extensions. The track project will increase station capacity and improve operating flexibility, leading to more efficient passenger boarding and better OTP.

Schenectady Station, constructed in 1979, is located adjacent to (and at a lower level than) the existing rail platform between the two tracks in downtown Schenectady. All Amtrak services stop at this station, including the Adirondack and Ethan Allen trains that diverge onto the adjacent Canadian Pacific main line to the north. The station platform is a single, low island platform about 745 feet long. Amtrak owns the station building and the Schenectady Metroplex Development Authority owns the southern parking lot. There are approximately 50 parking spaces available for Amtrak use. NYSDOT received federal High Speed Intercity Passenger Rail (HSIPR) funding toward the construction of a replacement intermodal station. The platform and related track improvements

⁴³ NORAC (Northeast Operating Rules Advisory Committee) Rule 121, Intervening Tracks at Station Platforms, a. General Requirements: When a passenger train is receiving or discharging passengers across an intervening track, trains and track cars must not pass between that train and the station platform.

were included in the double track project. The first phase included demolition of the existing station, platform concrete work, and repairs to the elevated viaduct for the railroad work for \$5.5 million. The station component for approximately \$20 million of federal grants and state monies included station demolition in 2017 and was completed in 2018.

Amsterdam Station, constructed in 1973, is a small, brick station building owned by Amtrak. The station has a single, low-level side platform located on the Track 1 side and 16 parking spaces. Generally, passenger trains are routed in both directions to Track 1 for boarding. When passenger trains must use Track 2, approaching trains on Track 1 must hold outside of the station because boarding passengers cross Track 1 at grade to access Track 2. In 2015 to 2016, improvements made included ADA improvements (interior and exterior), and station building improvements, including new HVAC system, bathroom remodeling, roofing, and insulation/doors.

The Boehlert Transportation Center at Union Station in Utica accommodates Amtrak and the Adirondack Scenic Railroad. All eight daily Amtrak passenger trains stop at Utica. Originally built in 1914, the historic station was renovated in 1978, with several phases of improvements ongoing. The station has two low-level platforms: a side platform to Track 2, and a center island platform serving Track 1 and a track used by the Adirondack Scenic Railroad excursion trains. There are approximately 200 parking spaces. Phased improvements on the station area include roof and station improvements (Phases 2 through 5), completed between 1997 and 2005. These improvements included interior renovations, renovation of overhead office space, and restoration of interior lobby, floor, and storefronts. Union Station and the parking area are owned by Oneida County. The station is located in the Central Business District near tourist, institutional and business attractions. Union Station includes a large building that houses county offices, retail establishments, and a farmers market. This area of Utica is slated for revitalization and redevelopment, including recent proposals to renovate the buildings housing office space within and around the station.

Rome Station was constructed in 1914 and renovated in 2004. The station is located in proximity to the canal waterfront, and neighboring commercial districts in downtown Rome. Rome Station, owned by the City of Rome, has a low-level, center island platform, as well as a platform on the side of the station house itself, and 32 parking spaces.

The William F. Walsh Regional Transportation Center in Downtown Syracuse is considered a long-distance multi-modal terminal, providing bus connections to intercity operators and the city's CENTRO buses. All eight daily Amtrak trains stop at Syracuse. The station opened in 1999, replacing the Amtrak station previously located in East Syracuse. Syracuse Station has a single, high-level center island platform and 266 parking spaces. There is presently only one track adjacent to the center platform with provision made for a second track between the platform and the station building. The facility, platforms, and parking are owned by Intermodal Transportation Center, Inc. A HSIPR grant of \$18.5 million and NYSDOT grant of \$4.6 million will cover final design and construction to provide congestion relief in the vicinity of Syracuse Station and CSXT's DeWitt freight yard to improve Amtrak and freight service on the Empire Corridor. Work funded under this grant reflects a multi-phase approach to provide congestion relief improvements in the project area. In the past, some of the tracks were only signaled in one direction, but bidirectional upgrades are being performed as part of Phase 1 of the Syracuse Track Configuration and Signal Improvements project, which will allow all the tracks to be operated in either direction, facilitating freight movements to DeWitt Yard. Construction of the congestion relief project is underway, with completion of Phase 1 in 2021.

Rochester Station, originally constructed in 1978, was reconstructed as an intermodal station using

\$15 million in federal TIGER funds, which was completed in October 2017. All eight daily Amtrak trains stop at Rochester. The station is in the densest portion of downtown Rochester, near educational, tourist, institutional and business uses and attractions. Rochester Station and north parking lot are owned by Amtrak. NYSDOT owns the southern parking lot. The station currently has a single, low-level side platform located on the Track 2 (south) side. There are a total of 40 parking spaces.

Buffalo-Depew Station, located in Depew, is a relatively small suburban facility constructed in 1979 (Exhibit 2-18). All eight Amtrak intercity passenger trains stop at Buffalo Depew. Buffalo-Depew Station and parking lots are owned by NYSDOT. The station has one low-level side platform located on Track 2 side (south). There are 80 parking spaces in both east and west lots. The station is located outside of the Central Business District and is surrounded by several large industrial and commercial operations. The station is close to the Buffalo Niagara International Airport.

In 2013, Buffalo-Depew Station completed state-of-good-repair and accessibility improvements funded via a \$770,000 HSIPR grant.



Exhibit 2-18—Buffalo-Depew Station

Buffalo-Exchange Street Station is located close to of central business district destinations and is served by municipal bus. The station was constructed in 1952 and is a small brick structure with a single low-level platform. The City of Buffalo owns the station building and parking lot, with parking for 20 cars. The station is served by the Amtrak Maple Leaf and four daily Niagara Falls trains. The station is not served by the Lake Shore Limited because the station is located on the Niagara Branch, just north of the track split between routes to Chicago and to Toronto. In the spring of 2017, a station siting committee jointly commissioned by the state and city endorsed potential sites for relocation of the station in the immediate downtown area adjoining the existing Buffalo-Exchange Street Station, as part of planned station improvements. In 2019, construction of a new \$27.7 million station on the existing station grounds began, at a location closer to Exchange Street, allowing construction of a taller station building structure, outside the shadow of the I-190 viaduct, and high-level platform. A pedestrian walkway under I-190 connects the station to Metro Rail on Main Street. Space is also reserved for 14 canopied parking spaces for the future addition of buses. A planned second phase will expand the station further to accommodate bus service and additional train routes, which would create an intermodal transit center.

Niagara Falls International Railway Station and Transportation Center formerly occupied a one- and two-story brick building, near Highway 61, which was formerly a freight house built for the Lehigh Valley Railroad in 1959. With completion of construction on a new intermodal transportation center that incorporates the U.S. Customhouse, the Amtrak station has been relocated 1 mile to the west. The new station incorporates the U.S. Customs and Border Protection in a complex consisting of the old customhouse and modern additions. Construction on the project, with \$16.5 million in funding from the US Department of Transportation's TIGER program, was completed in 2016. The new station is closer to the major Niagara Falls tourism destinations. There are 60 parking spaces

available. Crews still perform train cleaning and minor maintenance at the former station location, which includes layover yards, and trains are turned around in the yard tracks after stopping at the new station. NYSDOT owns the former station facility, currently leased by Owasco River Railway, Inc., which also includes facilities for Amtrak operating crews and personnel.

2.6. Safety Considerations

The safety of Empire Corridor passengers is of the utmost importance. Ten years of safety data made available from the FRA Office of Safety Analysis, from January 2008 through December 2017, were analyzed for counties located along the Empire Corridor. The FRA Office of Safety Analysis provided data on injuries and fatalities for train accidents, highway-rail incidents, and other accidents/incidents.⁴⁴ The FRA defines accidents/incidents as collisions, derailments, and other events involving the operation of on-track equipment and causing reportable damage above an established threshold; impacts between railroad on-track equipment and highway users at crossings; and all other incidents or exposures that cause a fatality of injury to any person, or an occupational illness to a railroad employee. Accidents and incidents are divided into Train Accidents, Highway-Rail Incidents, and Other, as follows:

- Train accidents are safety-related events involving on-track rail equipment (both standing and moving) that cause monetary damage to the rail equipment and track above a prescribed amount (threshold for 2008 is \$8,500);
- Highway-rail grade crossing incidents are any impacts between a rail and highway user (both motor vehicles and other users of the crossing at a designated crossing site, including walkways, sidewalks, etc., associated with the crossing);
- Other incidents are any death, injury, or occupational illness of a railroad employee that are not the result of a "train accident" or "highway-rail incident."

From 2008 to 2017, as shown in Exhibit 2-19, there have been 26 fatalities and 1,389 injuries in counties along the Empire Corridor. Ninety-six percent of all accidents/injuries were classified as "Other," or cases in which monetary damage was less than \$8,500 or was not classified as a highway-rail incident.

Along the Empire Corridor, there were 19 train accidents in this 10-year period. Across the U.S. in 2017, 575 people were killed and 505 were injured while trespassing on railroad ROWs and property. A majority of all fatalities and injuries along the Empire Corridor was due to other incidents, including incidents at public crossings and trespassing. New York County accounted for nearly 68 percent of all injuries, 15 percent of fatalities, and a majority of incidents occurred in this densely-populated county.

From 2008 to 2017, there were ten incidents at public grade crossings along the Empire Corridor; three of these incidents resulted in fatalities (1 fatality per incident). Comparatively, in the U.S. in 2016 alone, there were 2,041 incidents at public highway-rail crossings, resulting in 255 deaths and 843 injuries.

According to data published by the National Safety Council, highway travel is 12 to 20 times more

⁴⁴ FRA Office of Safety Analysis. "1.12 Ten Year Accident/Incident Overview by Railroad/Region/State/County." Accessed February 27, 2018, <<http://safetydata.fra.dot.gov/OfficeofSafety/publicsite/Query/TenYearAccidentIncidentOverview.aspx>>

likely to result in a fatality than rail travel. To further increase the safety of rail transportation and especially high-speed rail, the FRA prepared a High Speed Passenger Rail Safety Strategy in 2012.

Addressing grade crossings, a top priority, the Safety Strategy reinforces current FRA regulations that require the protection of rail movements with full width barriers capable of absorbing the impact of maximum weight highway vehicles where train-operating speeds are between 111 and 125 mph and that require elimination or grade-separation of all crossings where trains travel at speeds above 125 mph (49 CFR 213.347).⁴⁵

Exhibit 2-19—Ten Year Safety Data in Counties along Empire Corridor, 2008-2017

County (SE to NW)	Total			Train	Highway-Rail Grade Crossing		Other			Public Crossing
	Accidents/ Incidents	Fatalities	Injuries	Accident Injuries	Accidents/ Incidents	Fatalities/ Injuries	Accidents/ Incidents	Fatalities	Injuries	Incidents
New York	915	4	937	6			886	4	931	
Bronx	16	1	15	1			15	1	15	
Westchester	48	3	43	3			45	3	43	
Putnam										
Dutchess	49	3	46	1			48	3	46	
Columbia	26	3	25		1		24	3	25	1
Rensselaer	94	0	91	3			91		91	
Albany	69	1	71	1			68	1	71	
Schenectady	22	2	20	1			21	2	20	
Montgomery	4		3	1	1		2		2	
Herkimer										
Oneida	22		25	1	1	1	20		20	1
Madison										
Onondaga	32		33				32		33	
Cayuga	1	1	1		1	2				
Wayne	5		2	1	2		2		2	2
Monroe	34	4	30		1	1	33	3	30	1
Genesee	2	1	1		1	1	1		1	1
Erie	37	3	34				37	3	34	
Niagara	16		12		4		12		12	4
Total	1392	26	1389	19	12	5	1337	23	1376	10

Note: No data were available for Putnam, Herkimer, or Madison counties.

Source: FRA Office of Safety Analysis

The FRA Safety Strategy also addresses the following elements for high speed passenger rail operations:

- Eliminate all redundant or unnecessary crossings, together with any crossings that cannot be made safe due to crossing geometry or proximity of complex highway intersections.
- Install the most sophisticated traffic control/warning devices compatible with the location (e.g., median barriers, special signage [possible active advanced warning], four-quadrant gates), where train-operating speeds are between 80 and 110 mph.

⁴⁵ FRA. "High Speed Passenger Rail Safety Strategy". Accessed May 22, 2012, <<http://www.fra.dot.gov/downloads/safety/HSRSafetyStrategy110609.pdf>>

There are nearly 365 at-grade crossings on the current Empire Corridor centerline. When the Preferred Alternative is advanced in Tier 2 assessments, these at-grade crossings would be either enhanced or eliminated, depending on the final design speed, consistent with the FRA's regulations and guidance.

According to the Rail Safety Improvement Act of 2008 (RSIA), positive train control (PTC), a system designed to prevent collisions between trains, overspeed derailments, incursions into established work zone, and the movement of a train through an improperly positioned switch, was required on certain lines of Class 1 freight and passenger rail carriers, including the Empire Corridor trackage of Amtrak, CSXT, and Metro-North, by the end of 2015. Federal legislation by Congress deferred implementation to 2018. Under the revised mandate, rail operators can also be granted an additional two years to complete final testing of their systems, provided they meet certain baseline standards for infrastructure installation by 2018. CSXT has implemented PTC west of Hoffmans, and Metro-North has implemented PTC south of Poughkeepsie. The FRA has issued a \$33 million grant for installation of PTC technology on 97 miles of Amtrak-leased tracks between Hoffmans and Poughkeepsie, in territory between CSXT and Metro-North. The FRA implemented the legislative PTC requirements, including application to dedicated (passenger train only) high-speed rail lines; the RSIA language currently applies only to certain lines of Class 1 carriers and regularly scheduled intercity or commuter passenger operations.

Prior to the federally mandated deadline (December 2020), Metro-North completed full implementation of PTC on its entire system, including the 74.8 miles of the Hudson Line. Similarly, Amtrak and CSXT have completed PTC installation as well.

ROW safety measures include prevention of vandalism, launching of objects from overhead bridges or structures into the path of trains, and/or the intrusion of vehicles from adjacent ROW. While these are always important issues, protecting the HSR's ROW from overhead bridges or structures is especially important where at-grade crossings are eliminated by grade-separated crossings, as objects or even vehicles could fall from the overpasses and land on the tracks. European HSR uses intrusion detection nets (e.g., infrared, microwave, video technology) to communicate any hazards that may be on the tracks at overpass intersections.

3. Alternatives

This chapter describes the High Speed Rail Empire Corridor Program alternatives and the alternatives screening and selection process, and identifies the Preferred Alternative. This chapter reviews how NYSDOT developed the program alternatives, and examines the engineering aspects of all feasible alternatives to address the program purpose, needs, and objectives described in Chapter 1. This chapter also describes considered alternatives that were not advanced for further study, along with the reasons for not advancing them.

There are several aspects to each alternative including operational changes, investments in infrastructure, and equipment. Chapter 6 includes a comparison of the reasonable alternatives advanced for further study, and identifies the reasons for selection of the Preferred Alternative.

The specific **operational and physical elements used to define the alternatives** consist of:

- Maximum authorized speed (MAS);
- Frequency of service;
- Schedule enhancements, including express service;
- Track, bridge, signal and grade crossing improvements;
- Station and facility improvements;
- Equipment (locomotives and coaches);
- Capital costs at a program level; and
- Operations and maintenance costs.

This program is being undertaken to meet *the following needs*:

- Reduce infrastructure constraints, and
- Accommodate existing and projected demand.

The following **performance objectives** have been identified for the High Speed Rail Empire Corridor Program as measurable objectives that directly relate to the program purpose and need to reduce infrastructure constraints to accommodate existing and projected demand:

- Improve system-wide on-time performance (OTP) to at least 90 percent;
- Reduce travel time along all segments of the Empire Corridor;
- Increase the frequency of service (number of daily round trips) along Empire Corridor West beyond the existing four daily round trips;
- Attract additional passengers;
- Reduce automobile trips, thereby reducing highway congestion; and
- Minimize interference with freight rail operations.

These six performance objectives were used to evaluate and rank how the high-speed rail alternatives meet the goals and objectives for the High Speed Rail Empire Corridor Program. The evaluation criteria for screening and selection of the Preferred Alternative included performance measures such as trip time, on-time performance, ridership, and revenue.

The environmental impacts of these alternatives were also considered, as presented in the Tier 1 Draft EIS (see Appendix G), and were an important factor in selecting the Preferred Alternative advanced in this Tier 1 Final EIS.

3.1. Alternatives Development and Screening

The Federal Railroad Administration (FRA) has established three levels of high-speed rail service along with planning guidelines for each: Emerging, Regional and Core Express as shown in Exhibit 3-1.

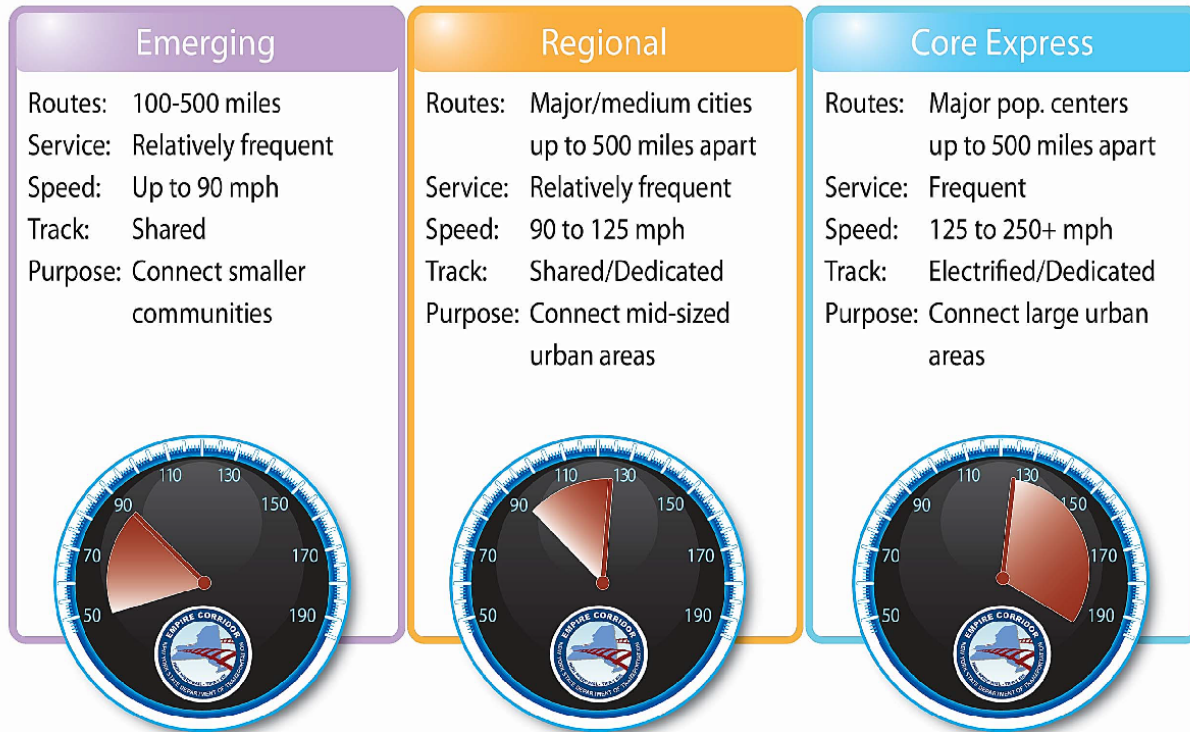
FRA uses the “**Emerging**” category to describe relatively frequent service used to connect smaller communities, and having speeds up to 90 miles per hour (mph), on tracks shared by freight, commuter, and intercity passenger rail.

The “**Regional**” category is used to describe relatively frequent service used to connect mid-sized urban areas, and having speeds between 90 and 125 mph, on tracks that may be shared by freight, commuter, and intercity passenger rail or on tracks dedicated for passenger rail.

The “**Core Express**” category is used to describe frequent service used to connect large urban areas, and having speeds between 125 and 250 mph or more, on tracks dedicated for intercity passenger rail.

Alternative development for this program initially began with categorizing possible alternatives according to the FRA’s levels of high-speed rail service. Using this information, NYSDOT developed an initial range of possible alternatives within the framework of these categories to satisfy the program purpose (refer to Section 1.3). Each service level achieves different goals, provides different top speeds, and requires different kinds and levels of investments. The initial range of possible alternatives developed for this program included six groups organized by the maximum authorized speed (MAS) associated with each group. NYSDOT based the naming convention of the alternatives on these groupings according to the MAS (79 mph, 90 mph, 110 mph, 125 mph, 160 mph, and 220 mph) with variations of the speed-based alternative designated by the letters A, B, and C.

- Using **79 miles per hour** as the maximum authorized speed represents what can be done with current track standards and in-cab signaling capacity. Alternatives in this category would use current vehicle technology with the possibility of integrated trainsets. They include several variations on the 79 mph alternative (Base, 79A, 79B, 79C) and would fall into the FRA’s “**Emerging**” category.
- Using **90 miles per hour** as the maximum authorized speed represents the next step up in track standards and in-cab signaling train control. Alternatives in this category would use current vehicle technology with the possibility of integrated trainsets. They include several variations on the 90 mph alternative (90A and 90B) and would fall into the FRA’s “**Regional**” category.
- Using **110 miles per hour** as the maximum authorized speed represents another step up in track standards. Described as the “110 Alternative,” this alternative would also use current vehicle technology with the possibility of integrated trainsets and would fall into FRA’s “**Regional**” category.
- A **125 miles per hour** alternative would be the first speed threshold for electrically powered

Exhibit 3-1—FRA Levels of High-Speed Rail Service

Source: FRA. *Vision for High-Speed Rail in America: High-Speed Rail Strategic Plan*. April 2009.

trains and represents another step up in track standards and advanced train control. This alternative would fall into FRA's "**Core Express**" category.

- A **160 miles per hour** alternative would represent the practical upper limit of electrified dynamic tilt trains, such as the Amtrak Acela, which provide faster operating speeds on curves. This alternative represents another step up in track standards and advanced train control and would fall into FRA's "**Core Express**" category.
- A **220 miles per hour** alternative represents the practical upper limit of high-speed rail operations seen in France, Germany, Spain, Japan and China and would fall within FRA's "**Core Express**" category.

In addition to maximum authorized speed, alternatives are further described in terms of service schedules, station stops, equipment, and physical improvements.

3.1.1. Service Schedules and Station Stops

Service frequency was a key consideration in developing and defining alternatives. Three service levels were considered:

- The existing four round trips per day between Albany-Rensselaer and Buffalo;

- Increasing the service to 12 round trips per day between Albany-Rensselaer, Buffalo, and Niagara Falls; and
- Increasing the service to eight round trips per day between Albany-Rensselaer, Buffalo, and Niagara Falls with express service.

An initial group of alternatives was defined that focused on improving the reliability (on-time performance [OTP]) of the existing four round trips per day service. This approach focused on identifying capital improvements to support an 85 percent to 90 percent OTP level between Albany-Rensselaer, Buffalo, and Niagara Falls, while maintaining the existing four daily round trips service.

A second group of alternatives was defined that increased service levels to 12 round trips per day as well as improved reliability. Preliminary Empire Corridor ridership was estimated in an iterative process based on varied levels of service frequency. Initial ridership forecasts were based on service frequencies between Albany-Rensselaer, Buffalo, and Niagara Falls of 12 round trips per day. This would be a substantial service expansion with estimated gains in ridership of about 65 percent. The ridership gains would be significantly less than the percentage increase in service levels (300%). Therefore, daily service levels of 12 round trips were determined to be very high when compared to the relatively low increase in ridership gained for the projected service increase.

NYSDOT determined that a third group of alternatives with service levels of eight round trips per day as well as improved reliability was a reasonable initial balance between service attractiveness and operating subsidy affordability. This doubling of the existing service would result in ridership gains of 38 percent to 74 percent over the Base Alternative depending on the alternative. The Base, or “No Action,” Alternative represented future conditions assuming planned and approved projects (see Exhibit 3-8) would be built, but without implementation of any of the “Build” Alternatives of this High Speed Rail Empire Corridor Program. The Base Alternative is used for comparison to all Build Alternatives.

In addition to determining the appropriate service level (eight round trips per day), the concept of providing express service was also evaluated along the Empire Corridor West during development of the alternatives. Two of the alternatives, Alternatives 90A and 125, would offer some form of express service between New York City and Niagara Falls.

3.1.2. Equipment

The number of new train sets, consisting of locomotive and passenger coaches, which would be required for each alternative, are indicated in the description of each alternative. The Empire Corridor does not support electric propulsion trains north of Croton-Harmon Station. At the same time, trains are required to operate with electric propulsion at Penn Station New York and through the East River Tunnels to the layover/servicing facilities at Sunnyside Yard in Long Island City, Queens. Therefore, the existing Empire Corridor is operated with specialized “dual mode” locomotives that can switch from electric to diesel operation (the present switchover occurs at about 40th Street in Manhattan, just north of Penn Station). The present Amtrak electric operation uses 700 volts (DC) third rail as an energy source at Penn Station and in the East River Tunnels. This third rail configuration is different than that of Metro-North, so Empire Corridor trains are unable to take advantage of the third rail between Spuyten Duyvil and Croton-Harmon.

In addition to dual mode locomotives, longer-distance Empire Corridor trains (those to/from Montreal, Toronto, and Chicago) utilize conventional diesel locomotives west of Albany. Both the dual mode and conventional diesel locomotives are capable of 110 mph operation, and regularly

achieve this speed on portions of the corridor between Hudson and Schenectady, but a long period of acceleration is required. Empire Corridor passenger coaches are single level unpowered coaches of the “Amfleet” type that date from the 1970s. These coaches, including some similar food service/business class cars, are approaching the end of their service life, but funding is not yet in place for their replacement.

3.1.3. Physical Improvements

Each alternative consists of a program of improvements needed to implement the characteristics of the alternative (increased speed, improved reliability, increased capacity to support additional service, and passenger amenities). The types of physical improvements include new sidings, new dedicated passenger track, grade crossing improvements or elimination, advanced train control systems, and station improvements. The specific improvements included in the alternatives are based on an evaluation of potential capital projects developed for each segment of the corridor. Between New York City and Albany-Rensselaer, the section known as Empire Corridor South, improvements were identified in the Hudson Line Railroad Corridor Transportation Plan.⁴⁶ A series of improvements were identified in this plan along with a likely year of implementation, based on operational need, capital cost, available funding, and permitting/design status.

In each case, a suite of capital improvements identified in the Hudson Line Transportation Plan are included for the Empire Corridor South segment, common to all Build Alternatives. These improvements are:

- Add second track between MPs 9 to 13 (including Spuyten Duyvil Movable Bridge);
- Add new Tarrytown pocket track to support Metro-North turnbacks without delaying Empire Corridor Service;
- Add new signal system between Croton-Harmon and Poughkeepsie Stations (MPs 32.8 to 75) for additional operating capacity;
- Add third track (MP 53 to 63) to support Empire Corridor overtakes of Metro-North trains;
- Add new track/siding at Poughkeepsie Station Track 3 to support higher operating speeds for Empire Corridor and Metro-North service;
- Add new Poughkeepsie yard to eliminate station congestion and crossing conflicts north and south of the station;
- Add New Control Point (CP) 82, New CP 99, New CP 136 – two-track universal interlockings to support enhanced reliability during maintenance activities;
- Reconfigure Hudson Station to support simultaneous passenger boarding/alighting on both main tracks.

Within the Base Alternative, the completed Albany-Rensselaer Station fourth-track capacity improvements were included in the Hudson Line Railroad Corridor Transportation Plan. In addition, NYSDOT identified improvement projects not already included in the Base Alternative. These include projects from:

- NYSDOT HSIPR grant and TIGER grant applications to the FRA,

⁴⁶ SYSTRA Engineering. *Hudson Line Railroad Corridor Transportation Plan: Final Report*, (Document No. M40801-11/95 18/STU-137). Prepared for Amtrak, Canadian Pacific Railway, CSXT, MTA Metro-North Railroad, NYSDOT. November 2005.

- The New York State Rail Plan, and
- Additional improvements identified during development of this Tier 1 Final EIS to improve speed and reliability and enhance service.

As with New York City to Albany-Rensselaer projects, NYSDOT designated these improvements with a likely year of implementation, based on operational need, capital cost, available funding and permitting/design status. NYSDOT gave priority to projects that provide relief to current delays experienced by passenger and/or freight trains. These delays were identified from the 2008 Empire Corridor baseline simulation model, which has been calibrated against actual operations. NYSDOT used 2008 as the analysis year because it reflects realistic trends in rail congestion, prior to the economic downturn (and concomitant decline in freight shipping) in 2009. Review of 2019 (pre-pandemic) available information shows that Amtrak schedules and freight traffic are essentially the same, therefore new rail simulation would not show substantial changes.

The general elements of each alternative are summarized in Exhibit 3-2. All alternatives would include projects planned under the Base Alternative (designated BA in Exhibit 3-2).

3.2. Alternatives Considered and Eliminated From Further Study

Once NYSDOT developed the initial full range of possible alternatives, NYSDOT subsequently screened alternatives according to the program purpose and need and associated objectives. NYSDOT applied a consistent set of performance measures (i.e., trip time, reliability, ridership, cost and revenue) to evaluate the range of possible alternatives.

NYSDOT did not advance certain alternatives based on an evaluation of these performance measures and comparative costs and environmental impacts. In addition, the performance of alternatives was compared against each other in the screening, and those that were not as effective in meeting the performance objectives were eliminated from further consideration.

The following describes the alternatives considered and eliminated from further study.

3.2.1. 79 mph MAS Alternatives

Two 79 mph Maximum Authorized Speed (MAS) infrastructure alternatives were considered, incorporating various infrastructure improvements and operational enhancements, as alternatives that would maintain the existing FRA class of track/maintenance tolerances in the corridor and constrain associated infrastructure improvements to the existing right-of-way. These two alternatives upgrade existing tracks and provide two different service levels—maintaining existing frequency of service and an approximate doubling of Albany-Rensselaer to Buffalo service—to form Alternatives 79A and 79B, respectively. Infrastructure improvements would include passing sidings and signal and station improvements.

A third 79 mph MAS alternative, designated Alternative 79C, included a new dedicated single main track with some new dedicated double main track segments for train passing adjacent to the existing Empire Corridor alignment. The principal attribute of all three of the 79 mph alternatives is to provide greater reliability and fewer conflicts with existing and future CSXT freight movements along the Empire Corridor West (service characteristics along the Empire Corridor South between Albany-Rensselaer and New York Penn Station would remain unchanged).

Exhibit 3-2—General Elements of the Alternatives

Alternative Components	BA	79A	79B	79C	90A	90B	110	125	160	220
Maximum Authorized Speed	79	79	79	79	90	90	110	125	160	220
Base Alternative Projects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
New Sidings		✓	✓	✓	✓	✓	✓			
Station Improvements		✓	✓	✓	✓	✓	✓	✓	✓	✓
New Service			✓	✓	✓	✓	✓	✓	✓	✓
New Dedicated Main Track				✓		✓	✓			
Grade Crossing Improvements				✓	✓	✓	✓			
Advanced Train Control System					✓	✓	✓	✓	✓	✓
Additional Right-of-Way within Existing Corridor						✓	✓			
New Corridor & Right-of-Way/ Electrified								✓	✓	✓
Eliminate Grade Crossings								✓	✓	✓

None of the 79 mph alternatives provide a significant operational or cost advantage over the 90 mph alternatives, which are distinguished primarily by track structure improvements to support higher passenger train speeds where feasible within the existing corridor alignment.

Simulations show that the New York to Niagara Falls trip time of Alternatives 79A/B is within 10 minutes (out of a scheduled trip time of over 8 hours) of that of Alternative 90A. Service levels are identical. As a result, ridership projections are essentially the same between these alternatives.

Similarly, Alternative 79C is characterized by essentially similar infrastructure as Alternative 90B, each with a dedicated third track over most of the corridor between Schenectady and Buffalo. Travel time differences between the two alternatives, based on detailed single train simulation, are less than 25 minutes (out of a trip time of more than 7 hours). Ridership projections for these two alternatives show less than 10 percent difference, reflecting identical service delivery and very similar trip times between the two alternatives.

Because there was no substantive and positive differentiator of the 79 mph alternatives, they were not advanced for further consideration. In each case, the comparable 90 mph alternative showed slightly superior trip time and ridership, resulting in it being retained over its slightly inferior 79 mph counterpart.

3.2.2. Very High Speed (VHS) Alternatives

During the program scoping process in 2010, considerable interest was expressed by the public and other program stakeholders in the potential for higher speed alternatives. These included a 160 mph alternative representing the practical upper limit of electrified dynamic tilt trains, such as the Amtrak Acela; and a 220 mph alternative representing the practical upper limit of high-speed rail operations

seen in France, Germany, Spain, Japan, and China. In response to this, a range of higher speed alternatives was carefully examined according to the same metrics as the other alternatives.

The very high speed (VHS) alternatives would require a dedicated right of way but would result in significant travel time savings (5:17 and 4:23 respectively for 160 mph MAS and 220 mph MAS), and commensurately higher estimated ridership (4.06 and 5.12 million respectively for 160 mph MAS and 220 mph MAS).

These gains would come with significant service and economic costs and possible environmental impacts. Attaining average speeds commensurate with the proposed investment would result in the likely diversion of the VHS service from all but four of the existing Empire Corridor West stations (i.e., Albany-Rensselaer, Syracuse, Rochester, and Buffalo Exchange would serve both the VHS and any continued “Legacy” Empire Corridor passenger service). Between Albany-Rensselaer and New York City, there would be an entirely new station and market configuration, with construction of new right-of-way on a viaduct structure aligned with existing highways (assumed to be I-87/NY State Thruway). Physical and environmental characteristics of the existing Empire Corridor South would result in either extraordinary encroachments and impacts or a diversion so far to the east as to fall outside the Empire Corridor as defined. As such, synergies between existing commuter rail and high-speed rail services in the corridor would be lost under these alternatives. It would not be possible to utilize Metro-North to originate at a suburban station and connect to a high-speed rail train.

At a corridor level, alternatives that are on alignments beyond the existing railroad corridor would be expected to have greater impacts to the natural and human environment than alternatives that follow the existing railroad corridor.

Although these alternatives would meet performance objectives, these improvements would come at a cost that is, by any current measure, infeasible at \$27 billion (160 mph MAS) and \$39 billion (220 mph MAS), calling into question the viability of improvements to the Empire Corridor that would go well above and beyond the current financial constraints. The projected capital cost of these alternatives is 30 to 43 times greater than the Amtrak intercity rail capital program for the entire United States for FY 2011, for example.

For all of these reasons, NYSDOT eliminated the VHS alternatives from further study. More prudent and feasible alternatives exist which confer transportation benefits and do not have substantial negative cost, property-taking, community, and environmental impacts.

3.2.3. 125 mph MAS Alternative on Existing Empire Corridor

A higher speed alternative, 125 mph MAS, was evaluated west of Schenectady, and consideration was given of running this service on the existing Empire Corridor West. The differences in costs and benefits, between Alternative 125 on the existing Empire Corridor and Alternative 125 on a new corridor, favor the new-corridor alternative. Use of the existing corridor for Alternative 125 would require additional infrastructure over and above the 110 Alternative: dual mode locomotives in electric mode would be operated along an electrified, completely grade-separated corridor that also includes (where possible) additional curve modifications.

Today, portions of the existing corridor geometry can support 125 mph MAS. However, just like the 110 and 90 mph Alternatives, there are portions of the corridor that could not be realigned to support 125 mph, so trains would have to slow down and speed up at each civil speed restriction. For instance, west of Syracuse, from Mileposts 328 to 351, a number of consecutive curves limit speeds

from 70 to 100 mph, with many at 80 mph. Although it may be possible to remedy a few of these curves, the fact that it takes so long for a train to recover speeds in the range of 80 to 110 mph, there is little to nothing to be gained in modifying the few curves that may be able to be eased, unless most all of the curves can be modified. That is, the trip time (or average speed) for the new corridor 125 Alternative will be better than the trip time (or average speed) for an existing-corridor 125 Alternative. The rail simulation (presented in Appendix D) did not quantitatively evaluate existing 125 mph MAS on the existing Empire Corridor. However, it did evaluate regional legacy service that would continue to operate on existing Empire Corridor for 125, making all train stops, and this service was considerably slower than the express service (by approximately 2 hours and 40 minutes). Appendix D addresses the rail simulation for Alternative 125 on a new exclusive alignment (express service) and states: *“When the data is presented solely for Albany to Buffalo (Exhibit D-41), the range of scheduled train speeds becomes more pronounced because the alternatives’ capital improvements are focused in this area. The current scheduled speed across Empire Corridor West is 57 MPH. Each of the alternatives, including the Base Alternative, provides higher average speeds. The 125 Alternative provides the highest average speed – 108 MPH for Express service.”*

NYSDOT has concluded that the incremental costs associated with upgrading the existing corridor from 110 mph MAS to 125 mph MAS are not justified by incremental improvement in trip time. The incremental approach will never achieve trip times close to a new corridor, although this does not include the purported acceleration improvements of electric traction equipment. Grade separating on the existing corridor adjacent to the existing freight tracks would be costly and complicated compared to constructing a new corridor.

3.3. Alternatives Advanced for Further Study

Five alternatives were advanced for further study:

- **Base Alternative:** consists of eight capital improvement projects that have been funded under FRA HSIPR and TIGER grants, in addition to normal maintenance.
- **Alternative 90A:** consists of 20 additional capital improvement projects previously identified for potential FRA HSIPR and TIGER grant funding. This alternative would provide a MAS of 90 mph with limited express service and also includes the Base Alternative projects.
- **Alternative 90B:** consists of additional areas of third track and fourth track and station improvements to accommodate a MAS of 90 mph. This alternative also incorporates the 20 Alternative 90A improvements, in addition to the eight Base Alternative projects.
- **Alternative 110:** consists of additional areas of third track and fourth track and station improvements to accommodate a MAS of 110 mph. This alternative also incorporates the 20 Alternative 90A improvements, in addition to the eight Base Alternative projects.
- **Alternative 125:** maintains existing Amtrak Empire Service and incorporates express service along a new, electrified, grade-separated corridor, providing a MAS of 125 mph between Albany-Rensselaer and Buffalo Exchange Street. The route overlaps with and serves station tracks at Syracuse and Rochester, incorporating Base Alternative improvements and those Alternative 90A improvements along the Hudson Line and Niagara Branch and the portions of Empire Corridor West that overlap with the new route.

Exhibit 3-3 presents a corridor map of the Build Alternatives, and Exhibit 3-4, Exhibit 3-5, and Exhibit 3-6 summarize the characteristics and improvements for each alternative. Chapter 6 presents the comparison of alternatives and rationale for selection of the Preferred Alternative.

These alternatives incorporate most of the improvements along Empire Corridor South outlined in the Hudson Line Railroad Corridor Transportation Plan, with the exception of the Base Alternative (which only incorporates improvements identified at Albany-Rensselaer Station).

Track centers described in this Tier 1 Final EIS are based on conceptual-level design. These conceptual-level track centers represent prudent estimates of proposed conditions and have been used to establish this program's potential impacts to adjacent property and environmental resources for each feasible Build Alternative. Specific track center design criteria and actual track centers proposed will be established during detailed design. Specific individual project track center design criteria, including any proposed design exceptions, will be developed considering factors including: the policies of the FRA, design guidelines and criteria of the railroad owners, and avoidance and minimization of impacts to adjacent property and environmental resources.

For the 90 mph and 110 mph Alternatives, the new higher speed tracks for passenger trains would be installed on the north side of the existing railroad alignment. This would avoid conflicts with the existing train movements on the route while the new tracks for the higher speed were being installed, and would minimize construction impacts on rail traffic.

The line historically operated as a four-track system, and, as part of cost-saving measures that started in the late 1950s, the two tracks that formerly existed on the north side were either removed or converted to sidings to save on maintenance. The new passenger tracks would be added in the former locations of these two tracks. The primary factors for installing tracks on the north side include the ability to upgrade existing sidings in place to become the third and fourth tracks. The current tracks in operation are on the south side of the right-of-way, and there is availability of right-of-way on the north where this area previously had tracks in operation. Installation on the south side would also require property acquisition in places. In many cases, infringement on waterways, roadways, or other obstacles, such as bridge columns, would occur. Sections of the Erie Canal system or Mohawk River closely adjoin the existing railroad in several different locations.

However, an additional cost of placing the new passenger tracks to the north is the need to construct additional crossovers, flyovers, and interlockings to allow freight trains running on the south side to crossover the new passenger mains to reach freight facilities on the north side. This cost may offset some of the cost savings of locating the new passenger tracks to the north, but the resulting interconnectivity between the passenger and freight mains has the benefit of facilitating future maintenance operations for both modes and provides bypasses for each in the event of a service interruption such as equipment failure, derailment, etc.

Alternative 125 achieves a MAS of 125 mph by developing a new conceptual corridor alignment that minimizes horizontal curvature and elevation changes. The location of the new corridor was determined based on topography and avoidance of geographic information system (GIS)-mapped constraints, while remaining near the existing railroad corridor and providing connections with the existing Albany-Rensselaer, Syracuse, Rochester, and Buffalo-Exchange Street Stations.

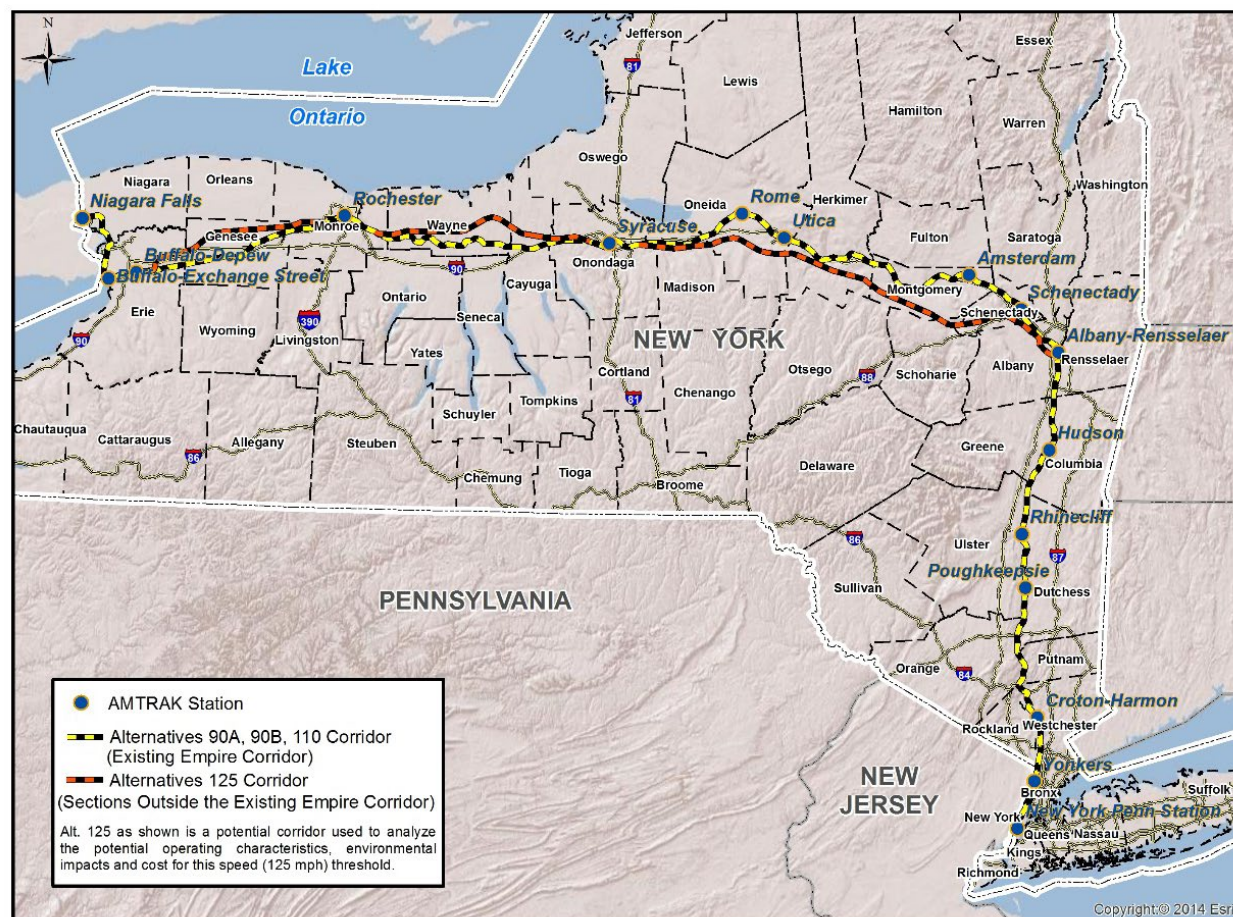


Exhibit 3-3—Corridor Map of the Build Alternatives

Exhibit 3-4—Summary New/Improved Infrastructure needed for Alternatives

Improvement/Addition	Alternative				
	Base	90A	90B	110	125
Miles of new mainline track	36	54			243 double track
Miles of dedicated third track		10	283	283	10
Miles of dedicated fourth track			39	59	
Miles of elevated track					56
Flyovers			3	2	
Bridges (undergrade)	34	74	284(*)	284(*)	74(*)
Station Buildings	2	6	5	5	4
Station Facilities and Trackwork	4	6	11	11	9
Bridges (overhead)			90	90	
Grade crossings	25	17	103	102	17

(*) Totals are for Empire Corridor West only.

Exhibit 3-5—Summary of Track Improvements for Alternatives

Description	Milepost	Base	90A	90B	110	125
Add 4 miles of second track (Spuyten Duyvil and movable bridge)	9 – 13		X	X	X	X
Add 1 mile of new track (Tarrytown Pocket Track)	23.8 - 25		X	X	X	X
Add 10 miles of new third track (Metro-North)	53 - 63.5		X	X	X	X
Replace Livingston Avenue Bridge	143		X	X	X	X
Construct/rehab. 17 miles of second main track (Rensselaer to Schenectady Stations)	143.2 - 160.3	X	X	X	X	X
Add 8 miles of second main track	161-169			X	X	
Add 10 miles of new main track (Selkirk/Mohawk Subdivisions)	169 - 178.5		X	X	X	
Add 273 miles of new third track	159 - 432			X	X	
Add 9 miles of new fourth track (Selkirk/Mohawk Subdivisions)	170 - 179			X		
Add 10 miles of new fourth track (Mohawk Subdivision)	174 - 184				X	
Add 10 miles of new fourth track (Mohawk Subdivision)	204 - 214			X		
Add 11 miles of new fourth track (Mohawk Subdivision)	218 - 229				X	
Add 4 miles of new fourth track (Mohawk Subdivision)	235 - 239			X	X	
Add 13 miles of new fourth track (Mohawk Subdivision)	246 - 259				X	
Add 8 miles of new fourth track (Rochester Subdivision)	301 - 309			X		
Add 10 miles of new fourth track (Rochester Subdivision)	310 - 320				X	
Add 1 mile of new fourth track (Rochester Subdivision)	373 - 374.3			X	X	
Add 9 miles of new third track & signal system (Rochester Subdivision)	373 - 382		X	X	X	
Add 11 miles of new third track & signal system (Rochester Subdivision)	382 - 393		X	X	X	
Add 8 miles of new fourth track (Rochester Subdivision)	375 - 383			X		
Add 11 miles of new fourth track (Rochester Subdivision)	388 - 399				X	
Grade Separated Flyover (Mohawk Subdivision)	279			X	X	
Grade Separated Flyover (Rochester Subdivision)	366			X	X	
Grade Separated Flyover (Rochester Subdivision)	427			X		
Double Track - Add 5 miles of second track (Niagara Subdivision)	QDN2 to QDN7			X		
Double track - Add 6 miles of second track (Niagara Subdivision)	QDN17 - QDN22.8		X	X	X	X
Upgrade 3 miles of existing track (Niagara Subdivision)	QDN25 - QDN28		X	X	X	X
20 miles of elevated Corridor between Albany and Schenectady	QH142 - QH162					X
106 miles of double track on new alignment	QH162 - QH268					X
15 miles of elevated corridor through and outside of Syracuse	QH268 - QH283					X
62 miles of double track on new alignment	QH283 - QH345					X
16 miles of elevated corridor through and outside of Rochester	QH345 - QH361					X
48 miles of double track on new alignment	QH361 - QH409					X
11 miles of track improvements at grade on existing alignment	QH409 - QH420					X
5 miles of elevated corridor in and east of Buffalo	QH420 - QH425					X

Exhibit 3-6—Summary of Station Improvements for Alternatives

Station & Improvements		MP	Alternative				
			Base	90A	90B	110	125
Rhinecliff	New high-level platform & canopy	89.2		X	X	X	X
Hudson	Reconfigure for simultaneous train stops on Tracks 1 and 2	114.5		X	X	X	X
	New Ferry Street Bridge/platform improvements			X	X	X	X
Albany-Rensselaer	New center island platform	142.1					X
	Extension of platform & canopy		X	X	X	X	X
	New 4th track		X	X	X	X	X
	New connecting tracks						X
Schenectady	New station building	159.8	X	X	X	X	X
	New stairs & elevators to platforms		X	X	X	X	X
	ADA compliant platforms		X	X	X	X	X
	Weather protected connector corridor		X	X	X	X	X
	New 3rd track				X	X	
Amsterdam	New station building	177.6		X	X	X	
	ADA compliant counter, restrooms, ramps, elevators			X	X	X	
	New high-level platform			X	X	X	
	Overhead pedestrian bridge				X	X	
	New 3rd track			X	X	X	
	New 4th track				X	X	
Utica	New center island platform	237.5			X	X	
	Overhead pedestrian bridge				X	X	
	New 3rd & 4th tracks				X	X	
Rome	New side platform	251.3			X		
	New center island platform					X	
	Overhead pedestrian bridge					X	
	New 3rd track				X	X	
	New 4th track					X	
Syracuse	New center island platform	291.4					X
	Modify existing side platform				X	X	
	Overhead pedestrian bridge						X
	New 2nd track			X	X	X	X
	New 3rd track			X	X	X	X
	Modify interlockings & one new interlocking			X	X	X	
	Upgrade existing 3rd track and signalization		X				
	Upgrade existing 3rd track as fourth track			X	X	X	
	Add crossovers & reconfigure signals			X	X	X	
	Rehab/replace Park Street Bridge			X	X	X	X
Rochester	New station building	371	X	X	X	X	X
	New high-level, center island platform		X	X	X	X	X
	Overhead pedestrian bridge		X	X	X	X	X
	New 3rd & 4th tracks		X	X	X	X	X
	New interlockings		X	X	X	X	
Buffalo-Depew	New station building	431.7		X	X	X	
	New high-level center island platform with canopy			X	X	X	
	ADA compliant platform, ticket counter, restrooms, ramps, railings			X	X	X	
	New 3rd track			X	X	X	X
	New 4th track				X	X	X
Buffalo Exchange Street	Relocated, new station building	QDN 1.9					X
	ADA compliant connections to existing facilities						X
	New center island platform at new location						X
	New 3rd & 4th tracks at new location and connecting tracks						X
Niagara Falls	Relocated, new station building	QDN 28.2	X	X	X	X	X
	US Customs Border Protection (CBP) inspection facilities		X	X	X	X	X
	Covered high-level platform		X	X	X	X	X
	Upgrade existing track		X	X	X	X	X

3.3.1. Base Alternative

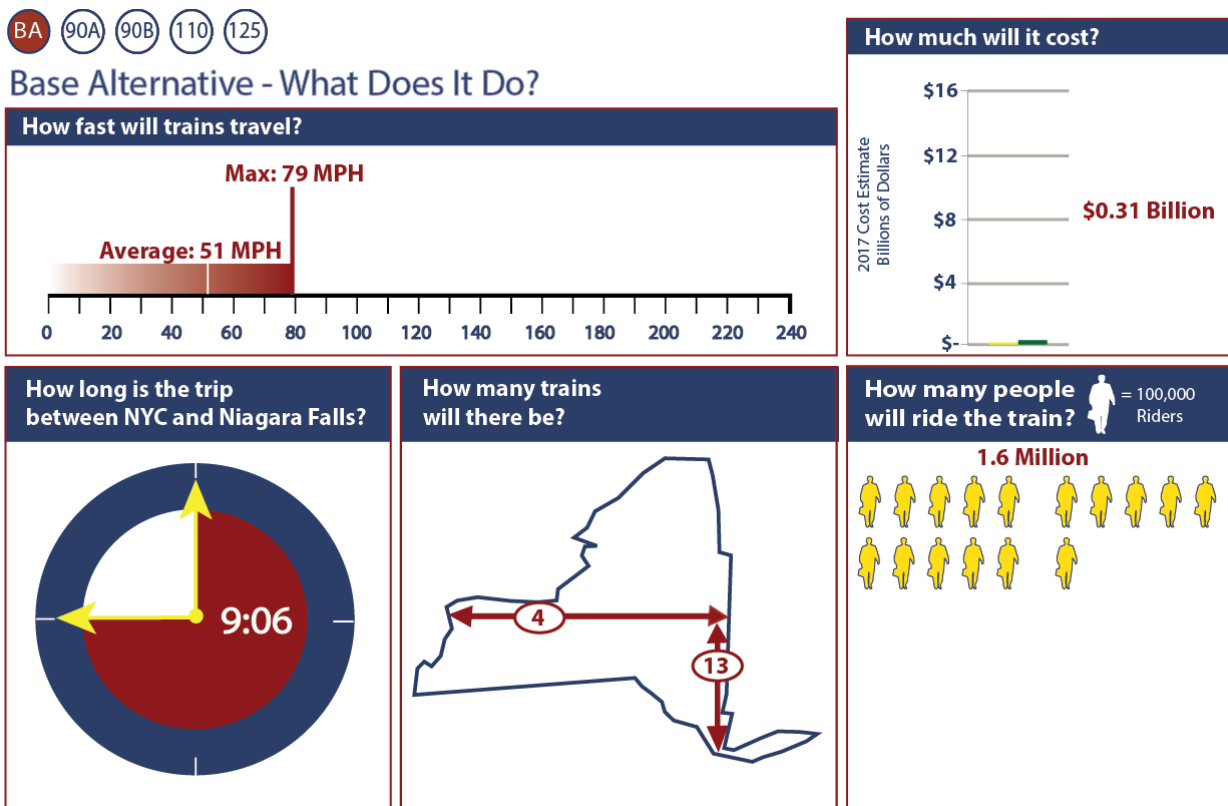
The Base Alternative is carried through the Tier 1 EIS as the basis to evaluate the cost and impacts of the program's Build Alternatives in relation to the benefits gained by the public. The Base Alternative consists of eight limited rail improvement projects that, at the time the Tier 1 Draft EIS was prepared, were planned and funded to address previously identified capacity constraints. Train frequency will remain unchanged from the existing frequency. The key features of the Base Alternative are illustrated in Exhibit 3-7.

The Base Alternative represents the future condition of the transportation network given committed rail, highway, bus, and airport improvement projects that have been built or are planned and are within the intercity travel market study area; i.e., the general geographic area served by the Empire Corridor.

Sources of information used to develop the year 2035 Base Alternative include the following:

- New York State Department of Transportation, Statewide Transportation Improvement Program (STIP);
- Metropolitan Planning Organization (MPO), financially constrained Long Range Transportation Improvement Plans (LRTPs) and Transportation Improvement Plans (TIPs);

Exhibit 3-7—Base Alternative – Key Features



Note: Travel time between NYC and Niagara Falls presented in hours: minutes, based on westbound scheduled times.

- Federal Aviation Administration (FAA) Terminal Area Forecast Summary, Fiscal Years 2010 – 2030;
- Various Airport Master Plans; and
- Various Bus Routing/Planning Documents.

Planned improvements to the highway infrastructure (automobile and bus modes), airport infrastructure, and rail infrastructure were accounted for in forecasts of market demand and ridership as part of the Base Alternative (see Appendix E). A description of alternative transportation modes (automobile, bus, air) is provided in Appendix E, Section 2, and Appendix B presents the transportation market analysis for these alternative modes compared to rail. The following is a description of planned improvements for passenger rail and freight rail service.

Physical Improvements

The Base Alternative represents a continuation of existing Amtrak service with those operational and service improvements already programmed. Such improvements consist of maintenance, rehabilitation and improvement to track capacity, signal work, highway-rail crossings, and passenger stations. Despite increasing ridership, the Base Alternative makes no provision for any improvement of rail service beyond what is already being operated and programmed by Amtrak, Metro-North, and/or NYSDOT. It assumes the continued operation of four daily round-trips of conventional speed Amtrak passenger service between Penn Station, New York City, and Niagara Falls on the Metro-North and CSXT owned alignment. Exhibit 3-4, Exhibit 3-5, and Exhibit 3-6 summarize the characteristics and improvements proposed or recently completed for the Base Alternative.

NYSDOT, Amtrak, Metro-North, and others had planned improvements to the New York State Empire Service to improve freight and Amtrak operations at several locations. Eight projects comprised the Base Alternative passenger rail improvements as presented in the Tier 1 Draft EIS, of which eight have since been completed, as described in Exhibit 3-8 and shown in Exhibit 3-9. These projects were all advanced independently, having received environmental clearances under NEPA. In addition, there are over 15 new projects proposed in the study area. These proposed projects do not substantially change the condition of the Base Alternative and the analysis presented in this Tier 1 Final EIS. Collectively, the completed and proposed projects will not change the environmental analysis and alternatives rankings because these projects do not add substantial main line track capacity and are located within the existing railroad rights-of-way. Together, these projects have and will continue to increase train speeds in the most heavily traveled sections of the Empire Corridor, increase capacity to enable more trains to operate without conflicts, and substantially improve schedule (On-Time Performance (OTP) reliability along with upgrade passengers' experience and increase ridership.

FRA had awarded NYSDOT High-Speed Intercity Passenger Rail grants in the corridor, in addition to TIGER grants. The HSIPR grants awarded for Empire Service include partial funding towards this Tier 1 EIS and these projects that comprise the Base Alternative. These eight interrelated projects provide for the following improvements:

- Enhancements to stations in Albany-Rensselaer, Schenectady, Syracuse, Rochester, and Niagara Falls;
- New tracks signaling, and communications;
- Interlockings; and

Exhibit 3-8—Base Alternative Passenger Rail Improvement Projects

Project Name (Milepost)	ARRA Grant Application	Project Description	Project Status
Hudson Subdivision Signal Reliability (MP 75.8 to 140)	ES-3	Replace old signal poles (for electric power to signals and communication lines) with underground cable between Poughkeepsie and Rensselaer Station.	Completed
Highway-Rail Grade Crossings Safety Improvements CSXT Hudson Line (MP 75.8 to 140)	ES-1	Design and install grade crossing active warning device, roadway approach and/or pedestrian improvements to accommodate improved passenger rail operations between Poughkeepsie and Albany-Rensselaer.	Completed
Albany-Rensselaer Station Fourth Track Capacity Improvements (MP 141 to 143)	ES-9	Add fourth track and extend platform to increase station capacity, operating speeds, train frequency, routing, and reduce delays.	Completed
Albany-Schenectady Double Track (MP 143.2 to 160.3)	ES-10	Design, construct, and rehabilitate a second main track between the Rensselaer and Schenectady stations to increase capacity, reduce bottleneck, and improve operations in congested single track segment.	Completed
Schenectady Station Renovation/Platform Improvements (MP 159.8)	EW-01	Complete station reconstruction, ADA-compliant platform and station access, viaduct repairs, and parking improvements.	Completed
Syracuse Track Configuration and Signal Improvements (MP 287 to 291)	EW-6	Upgrade main line tracks and third and fourth tracks to reduce congestion, delays, and interference between passenger and freight trains.	Completed ⁴⁷
Rochester Station Redevelopment / Operating Improvements (MP 368 to 373)	EW-19	New station building New high-level center island platforms, tracks/siding/interlocking to improve train operation efficiency, reduce congestion, and improve passenger safety.	Completed
Niagara Falls Station – New Intermodal Transportation Center (MP QDN28.2)	EW-13	New station with improved location in downtown Niagara Falls, function, operation, connectivity, border security, less delays.	Completed

Source: NYSDOT ARRA Grant Applications: ES = Empire Corridor South; EW = Empire Corridor West

NOTE: Section 2.5.5, Stations and Parking provides an update of status of improvements at station sites. The majority of these recently completed or proposed projects are ancillary improvements (e.g., parking or ADA improvements) that do not substantially affect track capacity on the order of magnitude as the proposed Build Alternatives.

⁴⁷ Phase 1 of the Syracuse Track Configuration and Signal Improvements (including installation of third track) was completed in 2021.

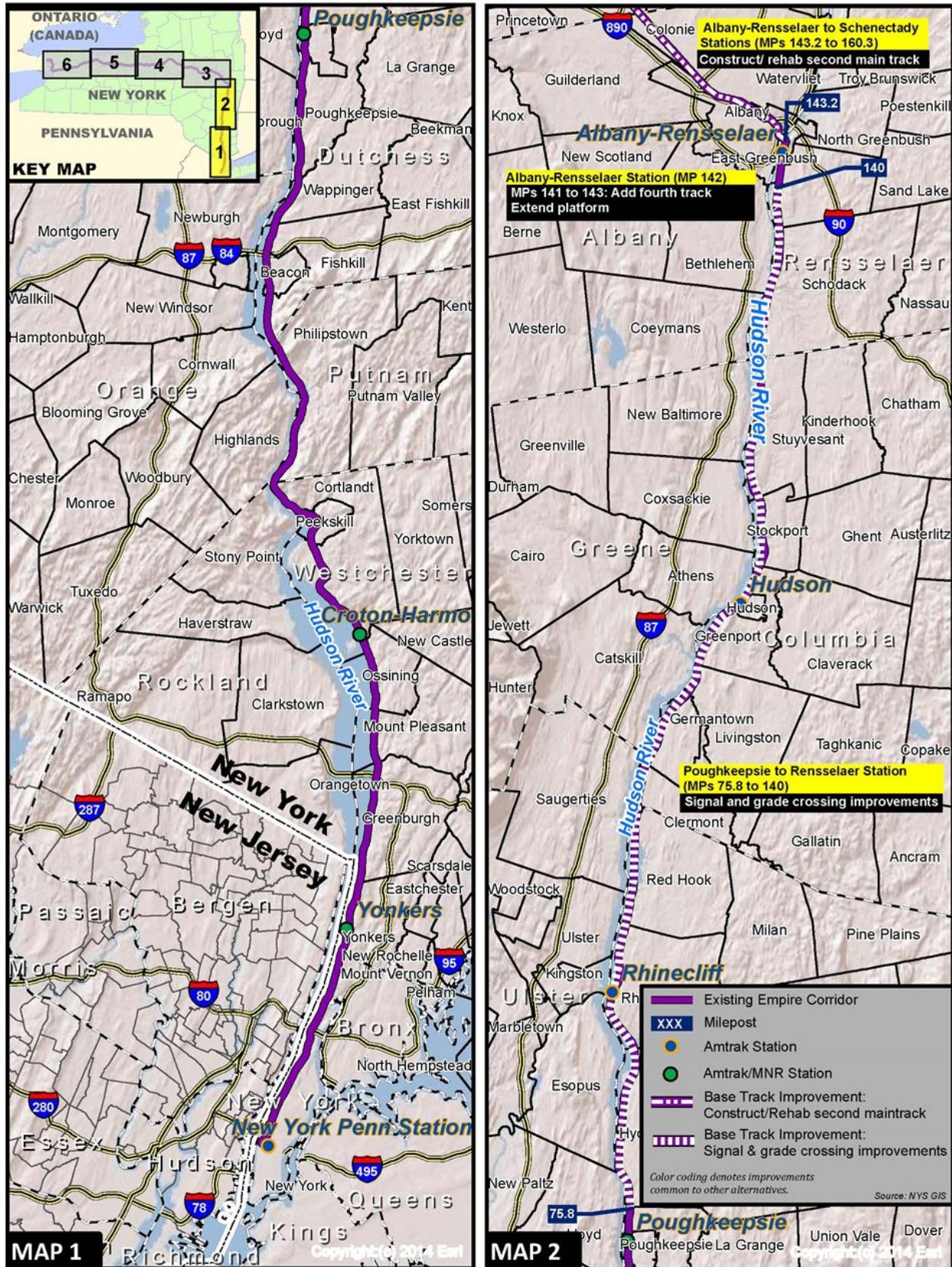


Exhibit 3-9—Base Alternative

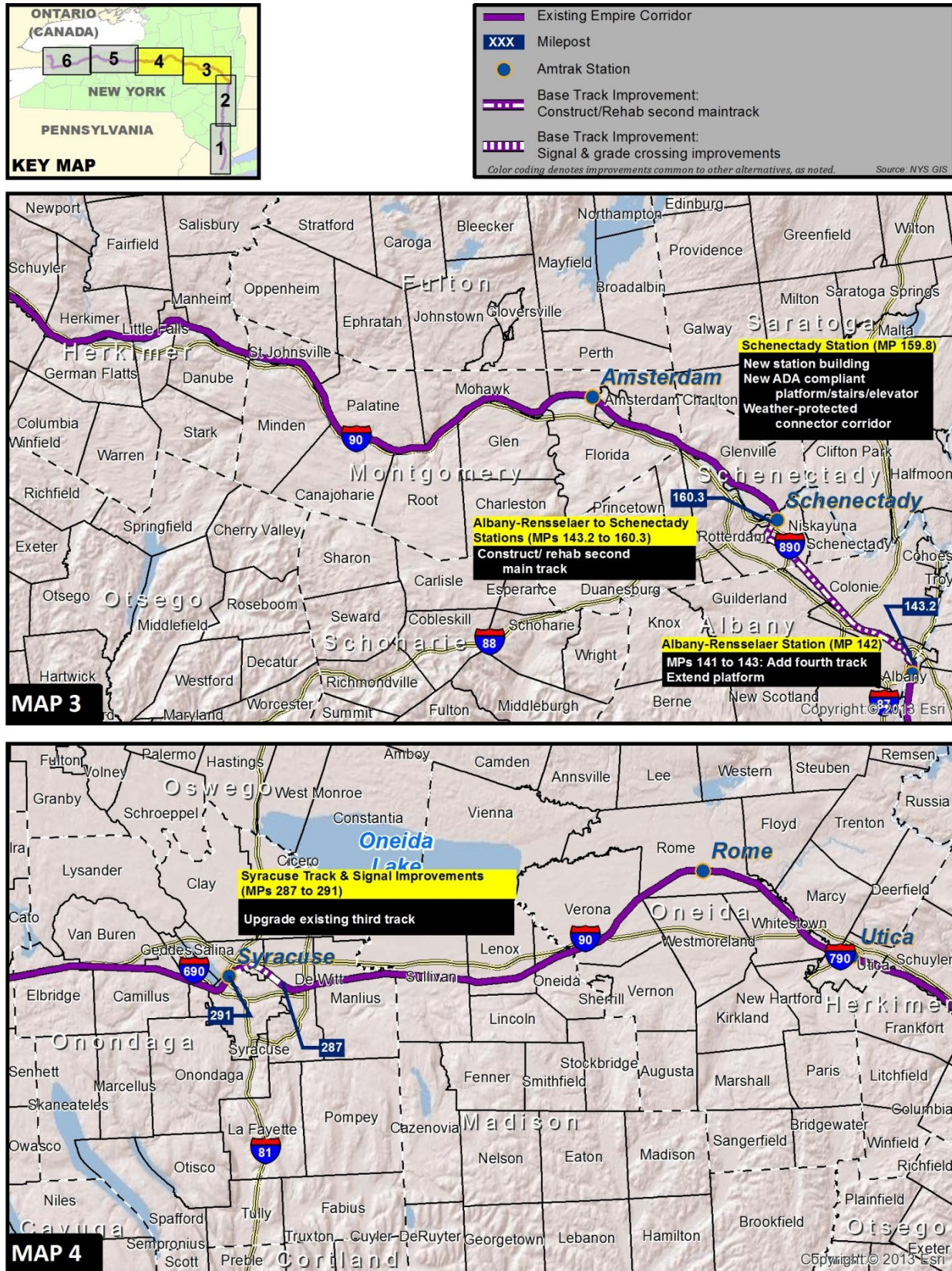


Exhibit 3-9—Base Alternative (Maps 3 and 4)

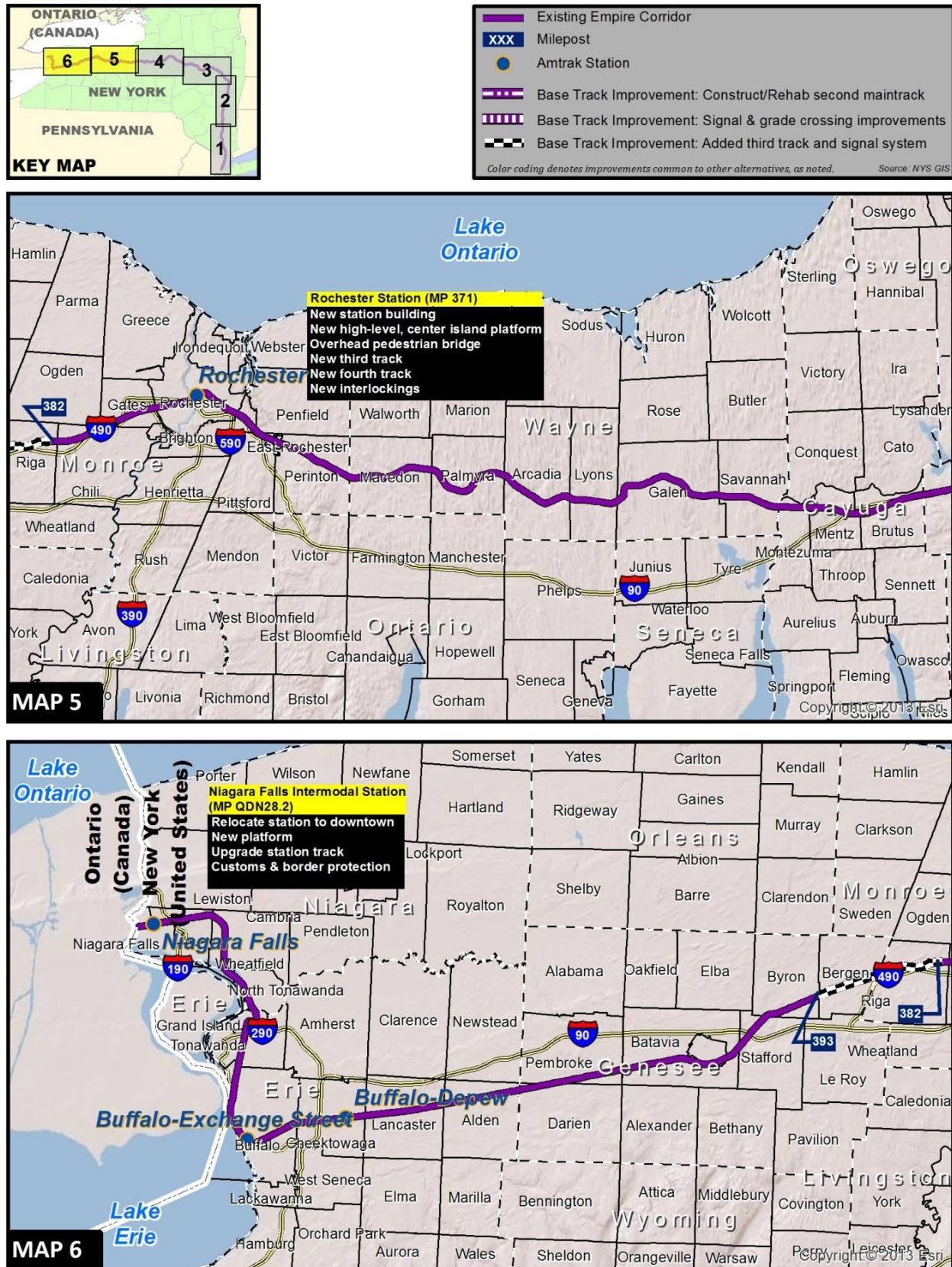


Exhibit 3-9—Base Alternative (Maps 5 and 6)

- Warning devices at grade crossings.

Under the Base Alternative, maintenance and rehabilitation of the existing freight rail system will continue. Rehabilitation will consist of improvements to track capacity, signalization, and highway-rail crossing improvements. Variations in times of departure and arrival, as well as train sizes and performance, are much greater in freight services than in passenger services.

Freight service schedules and train sizes/performance for the program area are generally kept confidential by the operators, due to the competitive nature of freight railroading. Therefore, the unpredictable nature of freight service and the projections of increased freight traffic support the projections of decreasing efficiency in the existing program area. Increasing this efficiency may be accomplished by reestablishing track in the program area where the track has been removed or by building new alignment track and by coordinating the schedules of both freight and passenger trains diverted to the reestablished and/or new alignment tracks.

Service Frequency Enhancement

The Base Alternative will maintain the existing 13 round trips per day between New York Penn Station and Albany-Rensselaer Station and the four round trips per day between Albany-Rensselaer Station and Buffalo, with three trips continuing to Niagara Falls.

Schedule Enhancement: Express Service and Station Stops

The Base Alternative will not add express service nor change the existing station stops made.

Equipment

The Base Alternative will not add new equipment.

Capital Costs

The estimated capital cost of the Base Alternative is \$310 million.

Trip Time

With the Base Alternative, trip time between New York Penn Station and Niagara Falls, based on westbound scheduled times, will be 9 hours and 6 minutes (9:06).

On-Time Performance

The OTP for the Base Alternative along the Empire Corridor West will be 83 percent in the year 2035.

Ridership

Ridership for the Base Alternative is projected to be 1.6 million passengers in the year 2035.

Revenue

Annual revenue to the Base Alternative is projected to be \$79 million.

Operations & Maintenance Costs

Operations and maintenance costs for the Base Alternative are estimated at approximately \$106 million per year.

Safety

The improvements included in the Base Alternative will result in an overall increase in safety for the traveling public due to the safety-enhancing projects proposed with this alternative. The increase in train ridership over existing conditions could translate to a decrease in highway traffic volumes. With fewer cars on the road this will, in turn, naturally result in fewer traffic accidents and other safety gains. Although there will be additional rail tracks built at some grade crossings, no new grade crossings will be added. Since the frequency of accidents, injuries, and deaths involving trains, especially with modern safety features at railroad grade crossings, is much lower than the frequency of accidents on highways, the overall number of accidents, injuries, and deaths will decrease due to the shift in travel from passenger cars to rail. Federal funding announced in 2017 for positive train control will improve safety for the route between Schenectady and Poughkeepsie, and Metro-North and the State of New York have advanced initiatives for PTC along the Hudson Line south of Poughkeepsie. Positive train control has also been implemented by CSXT west of Schenectady.

Freight Operations

The improvements are limited in scope, and no significant changes with respect to freight operations would occur under the Base Alternative. There would be no direct impacts on freight operations, and the freight trip times from Selkirk Yard in the Albany area to Buffalo are expected to remain relatively constant (projected to be 8 hours and 14 minutes).

3.3.2. Alternative 90A

Alternative 90A, one of the two 90 mph alternatives, would use 90 miles per hour as the maximum authorized speed. Alternative 90A would include constructing new track in designated locations to meet higher track standards than those currently in use on the Empire Corridor, with in-cab signaling train control. This alternative would use current vehicle technology with the possibility of integrated trainsets. Alternative 90A would fall into the FRA's "Regional" category.⁴⁸ Alternative 90A would add capacity and station improvements that consist of 20 separate, identified capital improvement projects, which are listed in Exhibit 3-11 in the "Physical Improvements" section. Alternative 90A improves service with the purchase of new train sets that would be used to increase the Empire Service to 16 daily round trip trains operating between New York City and Albany-Rensselaer Station and to eight daily round trips between Albany-Rensselaer Station and Buffalo, with seven continuing on to Niagara Falls. The key features of Alternative 90A are illustrated in Exhibit 3-10.

Physical Improvements

Alternative 90A would consist of 20 additional capacity and station improvement projects, in addition to the eight projects proposed under the Base Alternative. The assumption in this Tier 1 Final EIS is that the new train sets and equipment added in Alternative 90A would be staged and maintained at existing locations and/or facilities along the corridor and/or at spaces gained with the addition of these 20 projects comprising Alternative 90A. Exhibit 3-4, Exhibit 3-5, and Exhibit 3-6 summarize the characteristics and improvements proposed for Alternative 90A.

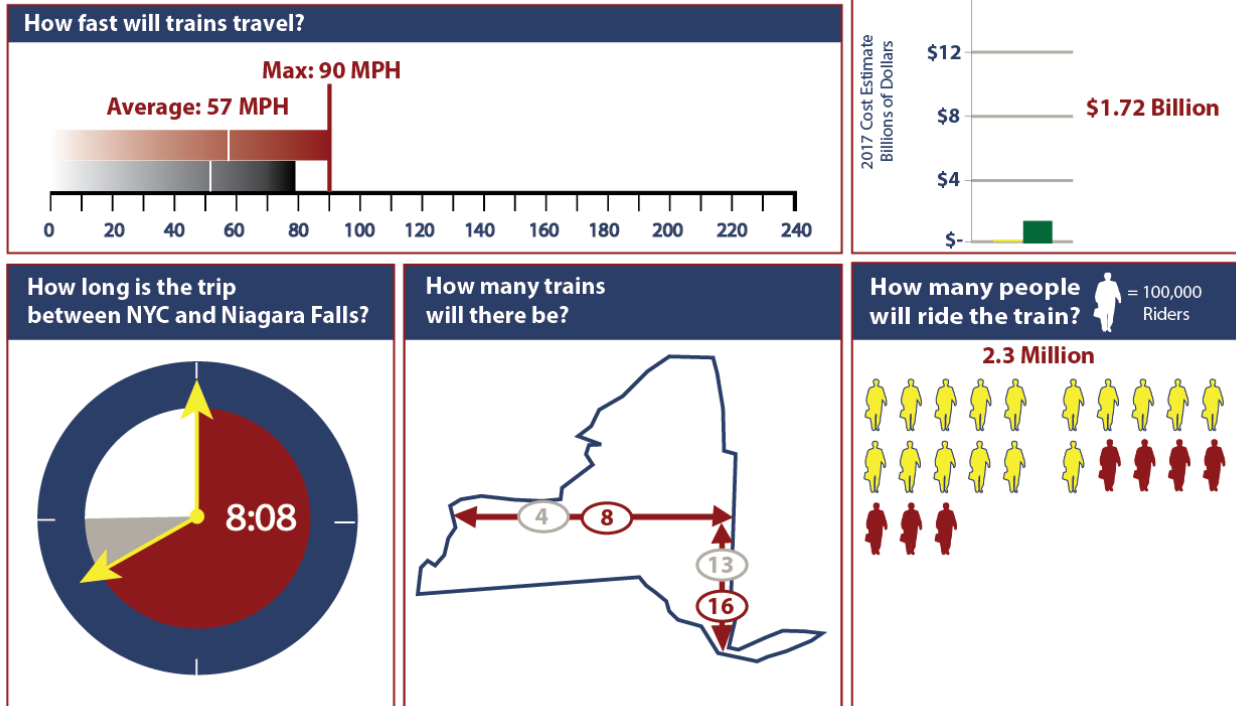
⁴⁸ FRA. *Vision for High-Speed Rail in America: High-Speed Rail Strategic Plan*. April 2009.

The 20 capital improvement projects included in Alternative 90A are summarized in Exhibit 3-11 and are shown in Exhibit 3-12.

Exhibit 3-10—Alternative 90A – Key Features

(BA) (90A) (90B) (110) (125)

Alternative: 90A - What Does It Do?



Note: Travel time between NYC and Niagara Falls presented in hours: minutes, based on westbound scheduled times.

Physical improvements would range from:

- Constructing new trackwork;
- Reconfiguring, realigning, and/or removing trackwork;
- Shifting track to improve clearances;
- Rehabilitating trackwork;
- Improving signalization;
- Installing new interlockings;
- Reconfiguring, removing, or relocating interlockings;
- Upgrading to higher speed turnouts;
- Widening and/or rehabilitating the roadbed and bridges;
- Improving stations and station platforms;
- Improving at yards and maintenance facilities;
- Installing pocket track;

- Eliminating or improving grade crossings; and
- Constructing civil support projects such as rock slope and right-of-way stabilization.

Exhibit 3-11—Alternative 90A Rail Improvement Projects

Project Name (Milepost)	Project ID	Project Description
Amtrak West Side Connection Spuyten Duyvil Second Track (MPs 9 to 13)	SRP-1	Increase capacity by adding a second track.
Metro-North – Tarrytown Pocket Track / Interlocking (MPs 23.8 to 25.0)	SRP-2	Increase capacity by adding a new track to improve speed, travel time, OTP, safety and reduce delay. Allows for increased future frequency.
Metro-North New Signal System (CP 33 to CP 75) (MPs 32.8 to 75.8)	ES-12	Signal system improvements to provide operating benefits in capacity, reliability and schedule recovery.
Metro-North – New Third Track (CP 53 to CP 63) (MPs 53 to 63.5)	SRP-3	Increase capacity, reduce delay and improve schedule and operational reliability by providing the capability for freight trains to meet/pass.
Metro-North Poughkeepsie Yard / Storage Facility Track / Signals (CP 71 to CP 75) (MPs 71 to 75.8)	ES-13	New track/siding and yard will help improve speed, travel time, OTP and safety and reduce delay. Allows for increased future frequency.
Rhinecliff Station Improvements (MP 89.2)	SRP-11	Improve reliability by adding high-level platforms to cut station dwell time in half.
Hudson Line Reliability Improvements New Control Points (CP 82, CP 99, CP 136) (MPs 82 to 136)	ES-05	Improve reliability by reducing spacing of interlockings, improving dispatching options to meet or pass trains, which will decrease delays.
Hudson Line Reliability Improvements Rock Slope Stabilization (10) (MPs 105.3 to 130)	ES-04	Improve reliability by removing / stabilizing rock slopes at 10 locations (5 locations between, MPs 105.3-106, one location at MP 119.5, and 4 locations at MPs 128.1-130), upgrading slide detector fences to improve safety, and reduce delays.
Hudson Station / Track Geometry Improvements (MPs 114.5 to 115)	ES-14	Improve reliability through track realignment / new Ferry St. bridge, which will improve speed and safety for station access, ADA-compliant platform; eliminate delays by supporting two trains serving the station at the same time.
Livingston Avenue Bridge (LAB) Replacement Project (MPs 143)	ES-15	Replace deficient moveable bridge to improve safety / reliability, travel time, remove speed / weight restrictions, increase capacity.
Mohawk Subdivision – New Main Track (CP 169 to CP 179) (MPs 169 to 178.5)	EW-14a	Increase capacity by adding a dedicated passenger track to increase frequencies and provide additional capacity / reliability.
Mohawk Subdivision Congestion Relief (CP 175, CP 239 & CP248) (MPs 175 to 294)	EW-05	Improve travel times, operational capacity and safety by upgrading automatic block signals, control points and interlockings.
Amsterdam Station Improvements (MP 177.6)	EIS-1	Improve reliability by constructing a new station with high level / double edge platform. Improve train operations and reduce dwell time.

Exhibit 3-11—Alternative 90A Rail Improvement Projects

Project Name (Milepost)	Project ID	Project Description
Belle Isle Capacity Improvements (CP 290 to CP 293) Syracuse Station - Track Improvements (MPs 290 to 294)	EIS-6	Increase capacity by providing additional freight train queuing capability and ability for freight trains to operate between DeWitt and Belle Isle Pocket Yard without occupying existing main line. Add second station track at Syracuse Station and reconfigure signals at the station including one new interlocking.
Rochester Subdivision Reliability Third Main Track (CP 373 to CP 382) (MPs 373 to 382)	EW-16	Increase capacity with third main track and signal system to improve speed, frequency, safety and reliability.
Rochester Subdivision Third Main Track (MP 382 to 393)	EW-20	New third main track and signal system to improve speed, frequency, and reliability.
Buffalo Depew Station Improvements (MPs 429.5 to 432.5)	EIS-10	Improve reliability by constructing new station with high level / double edge platform. Improve train operations and reduce dwell time.
Niagara Subdivision Double Track (CP 17 to CP 22) (MPs QDN17 to QDN23.8)	EW-17	Improve capacity by adding a second track.
Niagara Falls Maintenance Facility / Yard Improvements (MP QDN27)	EW-18	Improve reliability by adding storage tracks and a maintenance building to provide shore power, potable water, inspection, cleaning and light repair capabilities. Decreases time to prepare for AM departures and eliminates delays from frozen equipment. Increases layover capacity.
Niagara Falls Track Improvements (MPs QDN25 to QDN28)	EIS-12	Improve capacity and reliability by upgrading an existing track

ES = Empire Corridor South; EW = Empire Corridor West; SRP = State Rail Plan; EIS – Tier 1 Environmental Impact Statement

All physical improvements would be constructed within the existing ROW. No curves would be physically changed to increase speeds within the corridor. All improvements would be evaluated in greater detail as part of any future Tier 2 NEPA documentation.

With Alternative 90A, Amtrak service would continue to operate within the existing railroad right-of-way, primarily along the same tracks on which it presently operates and in a few limited segments on new alignments. Based on the conceptual-level design, new mainline tracks would be spaced at 15-foot centers on tangent alignments and increased for curvature. Since some existing multiple track segments where the alternative would add a track or two are at less than 15 feet (at 13 or 14 feet centers), increasing the distance between track centers to 15 feet or more may necessitate track shifts and/or isolated minor widening.

On the Hudson Line, number 32.7 turnouts would be used, where possible, to allow passenger trains to operate up to 80 mph through the diverging side of a turnout and through crossovers. This would improve run times by allowing the trains to remain at 79 mph MAS without having to decelerate and accelerate, approaching and leaving, slower speed turnouts (i.e., to 45 mph through a number 20, or to 60 mph through a number 26.5).

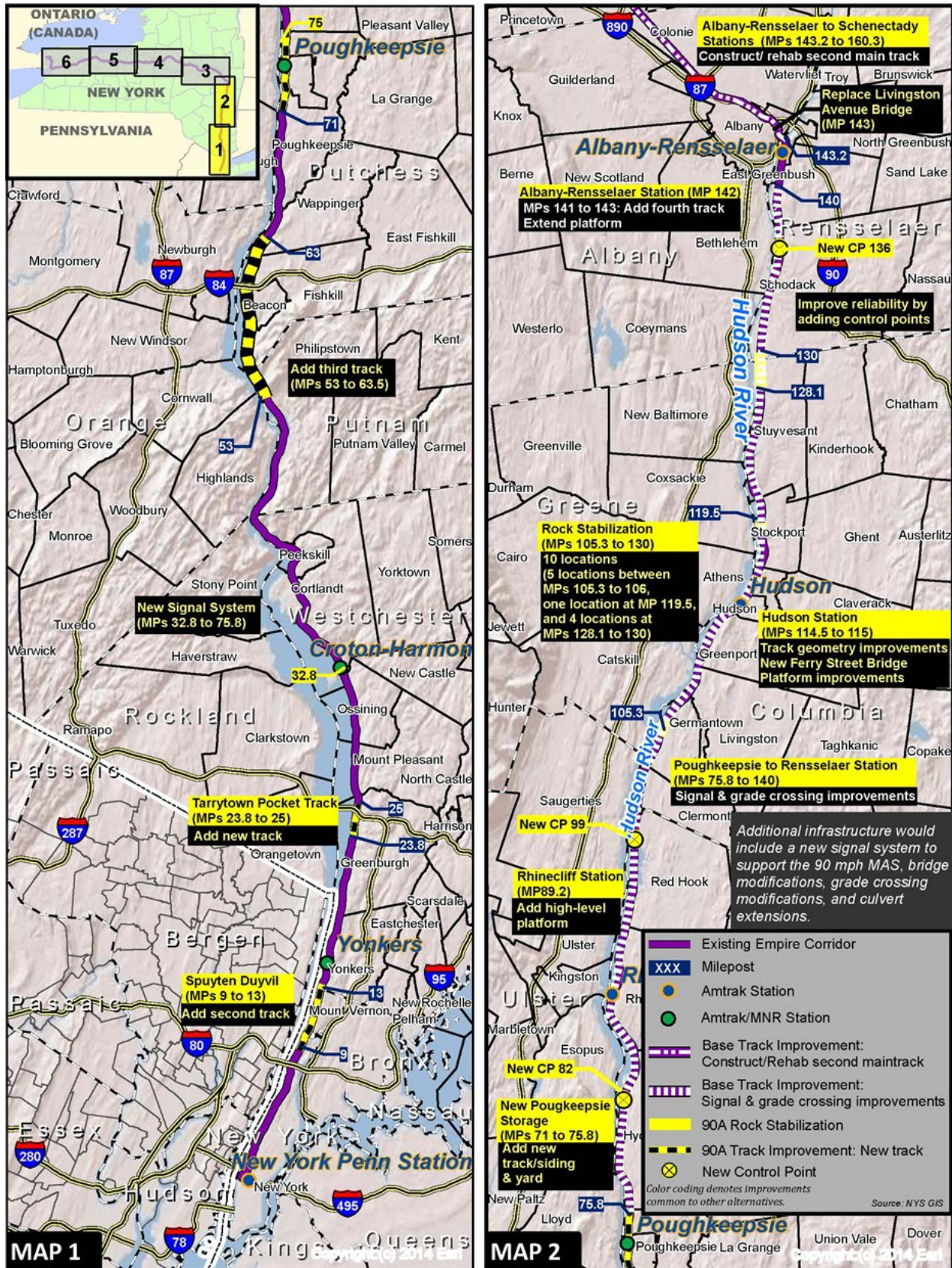


Exhibit 3-12—Alternative 90A

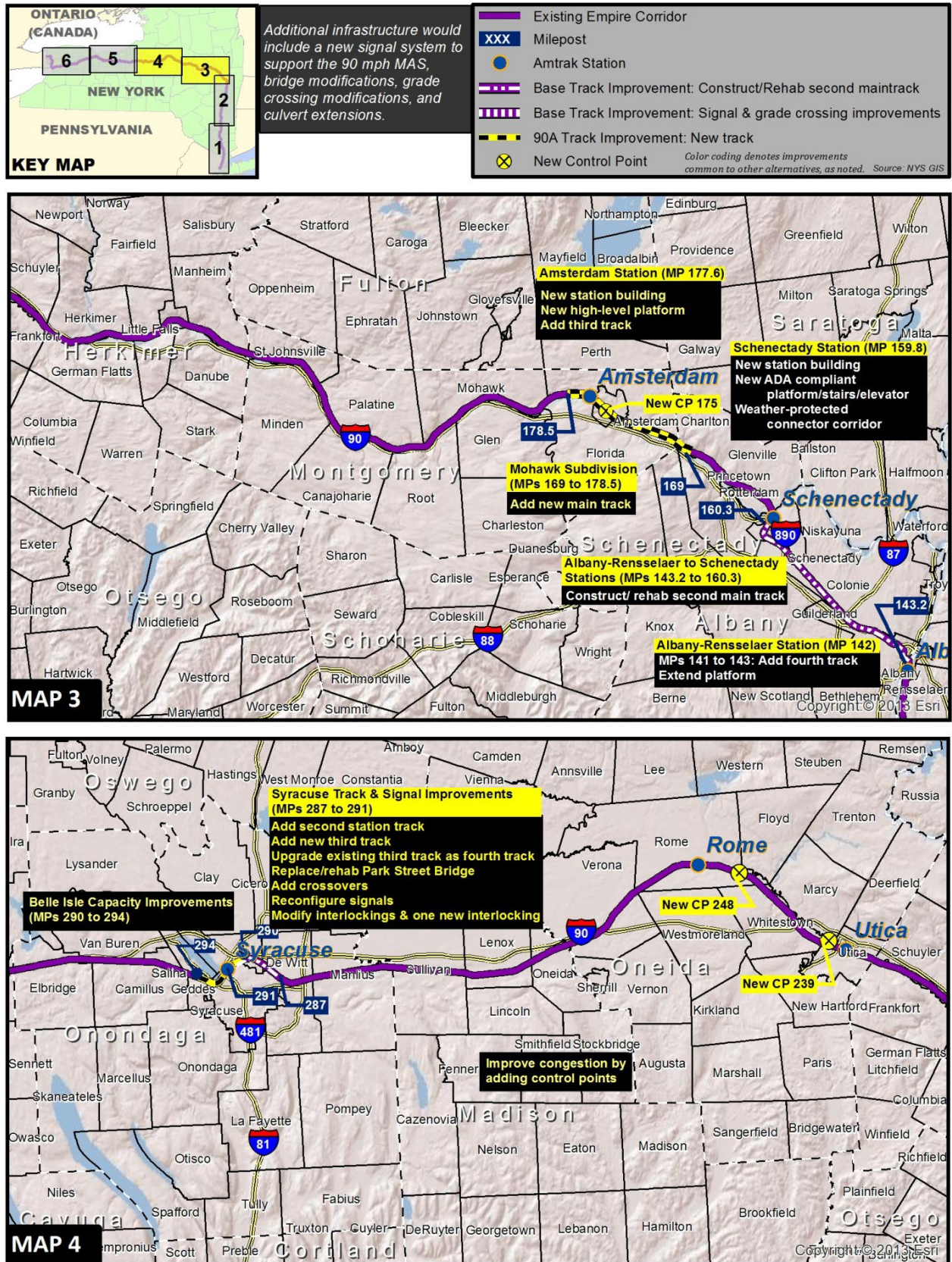


Exhibit 3-12—Alternative 90A (Maps 3 and 4)

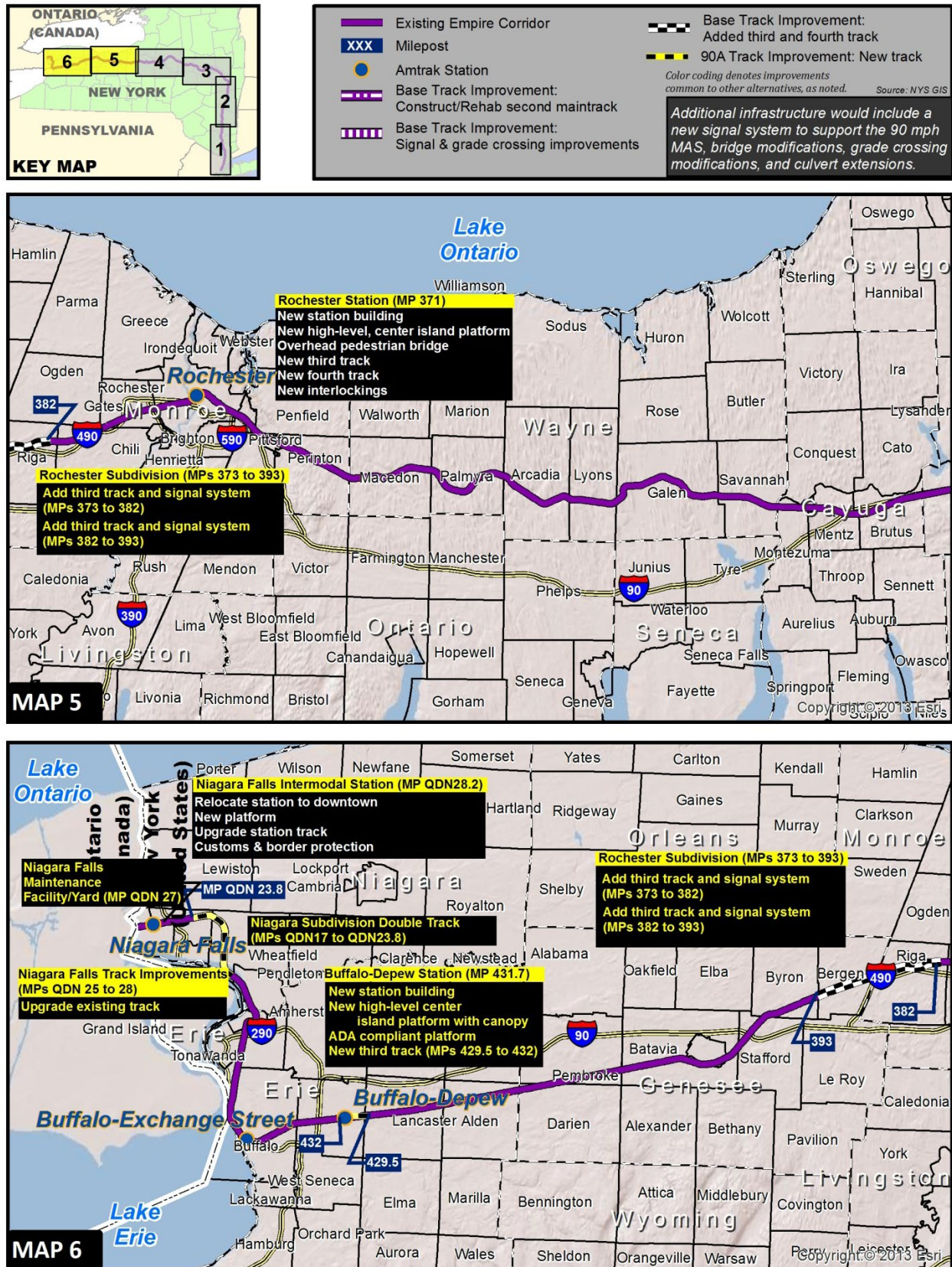


Exhibit 3-12—Alternative 90A (Maps 5 and 6)

Empire Corridor South

On the Empire Corridor South between New York City and Albany-Rensselaer, Alternative 90A includes the majority of the projects that were identified in the Hudson Line study. The Hudson Line projects are included because they provide benefits to reduce delay or improve reliability within the Hudson Subdivision. Those projects from the Hudson Line study not included in Alternative 90A either do not provide significant benefits or would be deferred to be constructed in later years. Only one project from the Hudson Line study is not included in either the Base Alternative or Alternative 90A:

- Stuyvesant Third Track and Interlocking Improvements (Project ES-06; Hudson Subdivision Reliability Third Main Track).

Alternative 90A improvements on the Empire Corridor South would include Project SRP-1 to reestablish a second track between CP 10 and CP 12 (across the Spuyten Duyvil). Alternative 90A would add a third main track at the following two locations:

- **CP 53 to CP 63** – Project SRP-3 would add a new third main track from CP 53 (north of Cold Spring Station) to CP 63 (north of New Hamburg Station) incorporating existing third track between, and modifying, CP 58 and CP 61 (at, and north of, Beacon Station); and
- **CP 71 to CP 75** – Project ES-13 would reconfigure three mainline tracks, north of Poughkeepsie Station to CP 75 (to expand the yard) and extend a third track a mile south to CP 71.

Alternative 90A would provide various other capacity improvements, reconfiguring the mainline and expanding yards to accommodate train operations and facilities at the following locations:

- **CP 24 to CP 25** – Project SRP-2 (mainline and yard improvements south of Tarrytown Station),
- **CP 33 to CP 75** – Project ES-12 (signal system improvements from Croton-Harmon Station to Poughkeepsie Station),
- **CP 71 to CP 75** – Project ES-13 (mainline and yard improvements at Poughkeepsie Station), and
- **CP 114 to CP 115** – Project ES-14 (mainline and other improvements at Hudson Station).

Facility enhancements such as track reconfigurations and platform additions would be provided at Rhinecliff, Hudson, Amsterdam, Syracuse, and Buffalo-Depew Stations, in addition to improvements from the Base Alternative at Albany-Rensselaer, Schenectady, Rochester, and Niagara Falls Stations (see Exhibit 3-6).

Empire Corridor West

On the Empire Corridor West, Alternative 90A would add significant features that include extending a new mainline third track at the following four locations:

- **CP 169 to CP 179** – Project EW-14a, capacity improvements west of Schenectady at “Hoffmans”, just east of the junction with the Selkirk Branch in Glenville, to just west of Amsterdam Station; and, along the way, incorporating the existing siding at Kellogg IT (CP 173 to CP 175);
- **CP 290 to CP 293** – Project EIS-6, Belle Isle capacity improvements at Syracuse Station;

- **CP 373 to CP 382** – Project EW-16, capacity improvements from just east of the Buffalo Wye to east of Route 259 (CP 373 to CP 380); incorporating existing track east of Route 259 to the West Shore connection (CP 380 to CP 382); and
- **CP 382 to CP 393** – Project EW-20 of Alternative 90A from the West Shore connection to eight miles east of Batavia Yard (CP 382 to CP 393).

These extensions would incorporate several Base Alternative and new capital projects within Alternative 90A, including upgrades of several segments of existing track for continuity along the way.

On the Niagara Branch, Alternative 90A would provide a second main track at the following location:

- **CP 17 to CP 22** – Project EW-17 would extend a second track between CP 17 (MP QDN17) and CP 22 (to MP QDN 23.8 at Tuscarora Road), connecting both leads of the “Lockport Subdivision Tuscarora Wye.”

Alternative 90A would provide new station buildings and/or station facility enhancements at five station locations, where items such as new track, crossovers and grade crossings, and ADA safety improvements, high-level platforms, and in some cases, a completely new station would be constructed.

New station buildings would be constructed at Amsterdam and Buffalo-Depew in addition to the new station buildings at Schenectady, Rochester and Niagara Falls from the Base Alternative.

Maximum Authorized Speed (MAS)

The MAS for Alternative 90A would be 90 mph (Empire Corridor West). The average running speed with Alternative 90A would increase to 57 mph, six miles per hour faster than in the Base Alternative. Amtrak passenger train speeds, both slower and faster, and limited locations along the corridor would remain unchanged in Alternative 90A. The MAS along the entire Empire Corridor is indicated on the “Alternative 90A Track Schematics,” Drawings 90A-1 to 90A-17 (refer to Appendix A).

With Alternative 90A along the Empire Corridor South, the MAS for Amtrak trains traveling north of Poughkeepsie (MP 74) to Hoffmans (at CP 169 near MP 170) would remain mostly at 75 to 95 mph with some exceptions. Relatively long stretches having higher MAS of 100 mph and 110 mph would remain at the following locations:

- 110 mph would remain along two segments: between the Stuyvesant IT (MP 125), just east of the Shodack SD connection, and Albany-Rensselaer (MP 142);
- 110 mph east of Schenectady between MP 149, west of the West Albany Yard, and the Carman IT at CP 156 (MP 156); and
- 100 mph would remain for most of the way west of Schenectady Station between MP 161 and Hoffmans at CP 169 (near MP 170).

Slower MAS would remain at the following locations along the Empire Corridor South:

- 50 mph at Hudson (MP 114),

- 30 to 75 mph approaching Albany-Rensselaer Station and the West Albany Yard (MP 141 to MP 145), and
- 30 to 70 mph at Schenectady Station (MP 159 to MP 161).

With Alternative 90A along the Empire Corridor West, the MAS for passenger trains traveling west of Hoffmans at CP 169 (near MP 170) to west of Frontier Yard (MP 435), west of Buffalo-Depew Station would remain mostly at 70 and 79 mph with many short segments having slower speeds. Slower MAS would remain at the locations on the Empire Corridor West listed in Exhibit 3-13.

Exhibit 3-13—Alternative 90A – Slower MAS

MP	Location	Description
193	Fonda	50 mph west of Amsterdam at for a mile at MP 183, just east of Fonda Yard, and at “Big Nose” curve
199	Canajoharie	60 mph at CP 198, just west of Route 10
217	Little Falls	55 mph at Borroughs Team Track (between CP 215 and CP 218)
237	Utica	60 mph at Utica Station
285 - 287	Dewitt	40 mph at DeWitt Yard
287 - 294	Syracuse	55 and 60 mph passing Syracuse Station (CP 293)
320	Savannah	40 mph at the “Floating Bridge” over the Seneca River
333 - 340	Lyons	55 to 70 mph passing Lyons Yard and approaching the Ontario Midland Railroad connection west of the yard
350 - 360	Macedon	65 mph for mile-long segments west of CP 349, and just west of the West Shore connection at CP 359
369 - 372	Rochester	55 to 45 mph passing Rochester Yard and Rochester Station
375	Rochester	45 mph at CP 375, just west of the Buffalo Wye
435 - QDN28	Buffalo Exchange Street & Niagara Falls	40 and 60 mph west of Frontier Yard to Niagara Falls on the Niagara Branch

Service Frequency Enhancement

Alternative 90A would increase the frequency of Amtrak Empire Service. Amtrak service between New York City and Albany-Rensselaer Station would increase to 16 daily round trips, adding three trains, a 23 percent gain above the current 13 trips in the Base Alternative. Service between Albany-Rensselaer Station and Buffalo would increase to eight daily round trips, with seven continuing on to Niagara Falls, roughly doubling the current four-trip service to Buffalo in the Base Alternative.

Schedule Enhancement: Express Service and Station Stops

The improvements in Alternative 90A would add express service to the Amtrak Empire Service. Four new round trips would operate as an express service with station stops in Niagara Falls, Buffalo-Exchange Street, Buffalo-Depew, Rochester, Syracuse, Albany-Rensselaer and New York City (Penn Station).

Equipment

Alternative 90A would add six train sets to increase the frequency of Amtrak service.

Capital Costs

The estimated capital cost of Alternative 90A is \$1.72 billion. The major cost components in Alternative 90A are the 20 additional capital improvement projects. The cost includes costs for Positive Train Control (PTC) and for additional train sets and equipment to increase the frequency of Amtrak rail service.

Trip Time

In Alternative 90A, the trip time between New York City and Niagara Falls, based on westbound scheduled times, would be 8 hours and 8 minutes (8:08). This would be 58 minutes shorter than the 9 hour and 6 minute (9:06) trip in the Base Alternative.

On-Time Performance

The OTP for Alternative 90A along the Empire Corridor West would be 92.4 percent in the year 2035.

Ridership

Alternative 90A is projected to increase annual ridership to 2.3 million passengers in the year 2035. This would be a gain of 700,000 above the 1.6 million passengers projected in 2035 for the Base Alternative.

Revenue

Annual revenue for Alternative 90A is projected to be \$122 million.

Operations & Maintenance Costs

Operations and maintenance costs for Alternative 90A are estimated at approximately \$160 million per year.

Safety

The improvements included in Alternative 90A would result in an overall increase in safety for the traveling public. The increase in train ridership would translate to a decrease in highway traffic volume. With fewer cars on the road this would, in turn, naturally result in fewer traffic accidents and other safety gains. Although there would be additional rail tracks built at some grade crossings, no new grade crossings would be added. Existing grade crossing warning/protection will be upgraded as needed with crossing gates, signs, crossbucks, flashers, etc. Private crossings will be protected by fence gates and signs, not active warning systems. Perimeter fencing has been accounted for in the cost estimate on both sides of the right-of-way. Since the frequency of accidents, injuries, and deaths involving trains, especially with modern safety features at railroad grade crossings, is much lower than the frequency of accidents on highways, the overall number of accidents, injuries, and deaths would decrease due to the shift in travel from passenger cars to rail.

Passenger and freight trains are currently comingled on CSXT's right-of-way. CSXT has expressed concerns about comingling of passenger rail and freight on Empire Corridor.

Alternative 90A will provide additional trackage to better segregate passenger rail and freight rail, thereby improving safety of rail transportation on the Empire Corridor. Alternative 90A would not increase the risk of an accident due to the proposed capital improvement projects. Alternative 90A would include improvements to the signaling system and Positive Train Control system, which would increase safety over existing conditions.

Implementation of safety measures, such as Positive Train Control (PTC), will be included in the design and construction of each of the alternatives. It is also anticipated that crash energy management measurements will be included in the design criteria for each concept alignment. CSXT's comments, including concerns regarding safety, are responded to in Appendix K, Comments and Responses for Railroads. During the Tier 2 assessments, additional coordination with CSXT will be performed to obtain input into the development of design plans.

The proposed track improvements would be designed to comply with American Railway Engineering and Maintenance-of-Way Association, Amtrak, and CSXT design criteria. Federal funding announced in 2017 for positive train control will improve safety for the route between Schenectady and Poughkeepsie, and Metro-North and the State of New York have advanced initiatives for PTC along the Hudson Line south of Poughkeepsie. Positive train control has also been implemented by CSXT west of Schenectady.

Freight Operations

Alternative 90A would provide additional sections of track, with sections of third main track added in at least five locations and second track added in at least two locations. For Alternative 90A, the new passenger tracks along Empire Corridor West would generally be located on the north side. The line historically operated as a four-track system, and, as part of cost-saving measures that started in the late 1950s, the two tracks that formerly existed on the north side were either removed or converted to sidings to save on maintenance. The new passenger tracks would be added in the former locations of these two tracks. The simulation of rail operations and the analysis of the potential impact of the program alternatives on freight operations demonstrate that Alternative 90A will likely have a positive effect on freight movements (or will at least be comparable to the Base Alternative) (see Exhibit 6-8 and Appendix D). Service is demonstrated to improve for both passenger and freight train operations as passenger interference is minimized. The Rail Network Operations Simulation (Appendix D) used information provided by CSXT for both current and future train movements.

The primary factors for installing tracks on the north side include the ability to upgrade existing sidings in place to become the third and fourth tracks. The current tracks in operation are on the south side of the right-of-way, and there is availability of right-of-way on the north where this area previously had tracks in operation. Installation on the south side would also require property acquisition in places. In many cases, infringement on waterways, roadways, or other obstacles, such as bridge columns, would occur. Sections of the Erie Canal system or Mohawk River closely adjoin the existing railroad in several different locations.

During final design there will be a detailed evaluation of the need to construct additional crossovers, flyovers, and interlockings to allow freight trains running on the south side to crossover the new passenger mains to reach freight facilities on the north side.

3.3.3. Alternative 90B (Preferred Alternative)

NYSDOT has identified Alternative 90B in this Tier 1 Final EIS as the Preferred Alternative, for reasons described in Chapter 6. The selection of the Preferred Alternative considered the comments received from the public and agencies during the public comment period for the Tier 1 Draft EIS. This Tier 1 Final EIS presents the comparison with the Base and all other Build Alternatives considering the program purpose and need, engineering and operational characteristics, costs, and socioeconomic and environmental impacts, which were all factors in the selection of the Preferred Alternative.

Alternative 90B, one of the two 90 mph alternatives, uses 90 miles per hour as the maximum authorized speed, and consists of constructing new third and fourth mainline track and a new signal system to support the 90 mph speed. This alternative would use current vehicle technology with the possibility of integrated trainsets. Alternative 90B would fall into the FRA's "Regional" category. Alternative 90B would improve service with the purchase of new train sets that would be used to increase the Empire Service to 17 daily round trip trains operating between New York City and Albany-Rensselaer and to eight daily round trips between Albany-Rensselaer and Buffalo, of which seven continue on to Niagara Falls. The key features of Alternative 90B are illustrated in Exhibit 3-14.

Physical Improvements

Alternative 90B would add a total of approximately 370 miles of additional trackage to better segregate passenger rail and freight trains. Alternative 90B would add dedicated third main passenger track for approximately 273 miles between Schenectady (MP 159) and Buffalo-Depew (MP 432) (see Exhibit 3-15). It would also add a fourth passenger track over a combined distance of approximately 39 miles in five separate locations (MP 170-179, MP 204-214, MP 235-239, MP 301-309, MP 375-383). Based on the conceptual-level design, the third main passenger track would be located on the north side of the existing tracks, 15 feet from the existing mainline, and would generally occupy the portion of the existing railroad bed that historically contained two tracks. The fourth tracks would be located 15 feet further north of the dedicated third track and have been designated with a MAS of 90 mph. Alternative 90B would also add double track to the Niagara Branch between MPs QDN 2 and 7, west and north of the Buffalo Exchange Street Station.

Additional infrastructure would include:

- A new signal system to support the 90 mph MAS;
- Bridge modifications;
- Grade crossing modifications;
- Culvert extensions;
- Station improvements; and
- Three grade separated flyovers (MP 279, MP 366, and MP 427) where the third main passenger track passes over the existing freight tracks on an elevated structure, eliminating any potential conflicts with freight train movements.

The proposed flyovers are capital intensive, but would serve as an effective infrastructure improvement that could be designed to reduce passenger/freight interference. The concepts for the three flyovers presented in this Tier 1 Final EIS would be developed further in Tier 2 design. Other

alternatives could be explored by developing a series of joint improvements both for station access and layouts and track/signal systems and alignment.

Grade crossing modifications would be required to accommodate new tracks. Upgrades to existing grade crossing warning devices would be determined in subsequent design phases and in any Tier 2 documents.

Locations for potential maintenance service roads have been identified along the entire corridor between MP 159 and MP 432. Service roads provide necessary access to the railroad infrastructure for routine inspections, regular maintenance, and emergency situations. The specific need, size, and location of the service roads will be determined in subsequent design phases and Tier 2 studies. Some level of property acquisition would be required over substantial portions of Alternative 90B, not only for service road construction, but to accommodate the geometry and track centers of the third and fourth main tracks.

Empire Corridor South

The improvements proposed with Alternative 90A on the Empire Corridor South also would be included in Alternative 90B. The additional improvements provided with Alternative 90B would all be located on the Empire Corridor West.

Empire Corridor West

Exhibit 3-4, Exhibit 3-5, and Exhibit 3-6 summarize the characteristics and improvements proposed for Alternative 90B, which also include improvements proposed for Alternative 90A. For descriptive purposes, the major physical improvement features of Alternative 90B are presented in two segments along the Empire Corridor West. The first segment is between Schenectady and Syracuse (MPs 159-292), and the second is between Syracuse and Buffalo-Depew (MPs 292-432). Syracuse Station is the approximate center of the third track segment (133 miles from Schenectady to Syracuse and 140 miles from Syracuse to Buffalo-Depew).

Schenectady to Syracuse (MP 159-292)

Within this segment, Alternative 90B would provide the major improvements shown in Exhibit 3-4, Exhibit 3-5, and Exhibit 3-6, based on the conceptual design developed for this Tier 1 Final EIS.

Several areas would require larger track shifts to obtain an increase in operating speeds due to the existing geometry of the track: MP 168.3, MP 192.6, MP 198.5, MP 199.4, and MP 205.6.

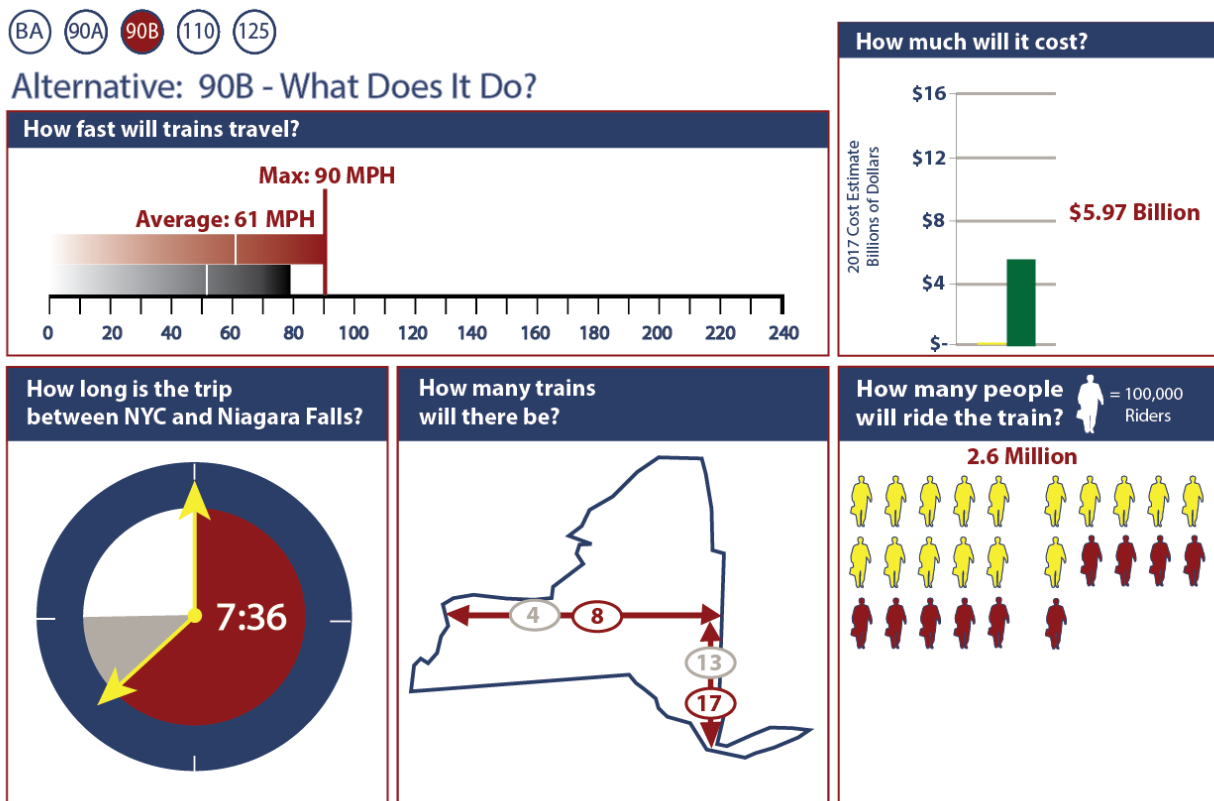
Station improvements would be made at the following existing stations:

- **Schenectady Station** – As proposed for the Base Alternative, new station building, stairs and elevators to platforms, ADA compliant platform, and weather-protected corridor would be provided, and a new third track would be added with Alternative 90B.
- **Amsterdam Station** – As proposed for Alternative 90A, a new station building, ADA compliant counter, restrooms, ramps, elevators would be provided, with a new high-level platform and new third track, but Alternative 90B would also add an overhead pedestrian bridge and new fourth track.
- **Utica Station** - New center island platform, overhead pedestrian bridge, and new third and fourth track would be provided.

- **Rome Station** – New side platform and new third track would be provided.
- **Syracuse Station** – As proposed for the Base Alternative, upgrades to the existing third track would be provided. As proposed for Alternative 90A, new second and third tracks, modified and one new interlocking, and added crossovers and reconfigured signals would be provided, in addition to rehabilitation/replacement of the Park Street Bridge. Alternative 90B would also modify the existing side platform.

Alternative 90B also would require realignment of several existing roadways that are adjacent to the railroad right-of-way over a total length of approximately four miles. Roadway realignments would be required along approximately 3.5 miles of Route 5 and other roadways that closely parallel the railroad between Schenectady County and Onondaga County. Most of these realignments would be minor and as little as approximately ten feet horizontally. Other roadway realignments would be more substantial, could range in excess of 50 feet horizontally, and could potentially involve property acquisition for the roadway relocation. Coordination with local authorities and FHWA, as appropriate, will occur in individual project planning and Tier 2 efforts.

Exhibit 3-14—Alternative 90B (Preferred Alternative) – Key Features



Note: Travel time between NYC and Niagara Falls presented in hours: minutes, based on westbound scheduled times.

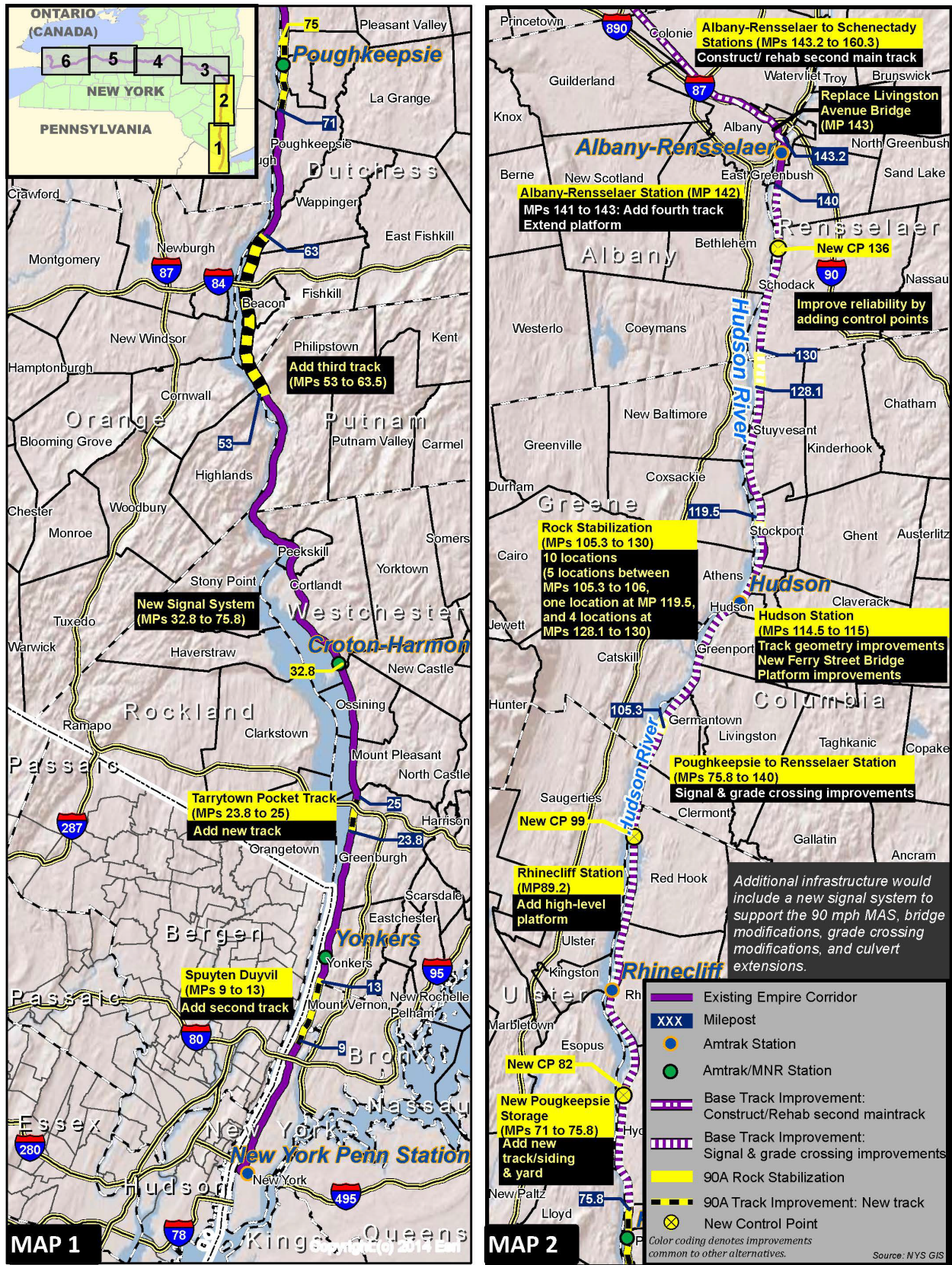


Exhibit 3-15—Alternative 90B (Preferred Alternative)

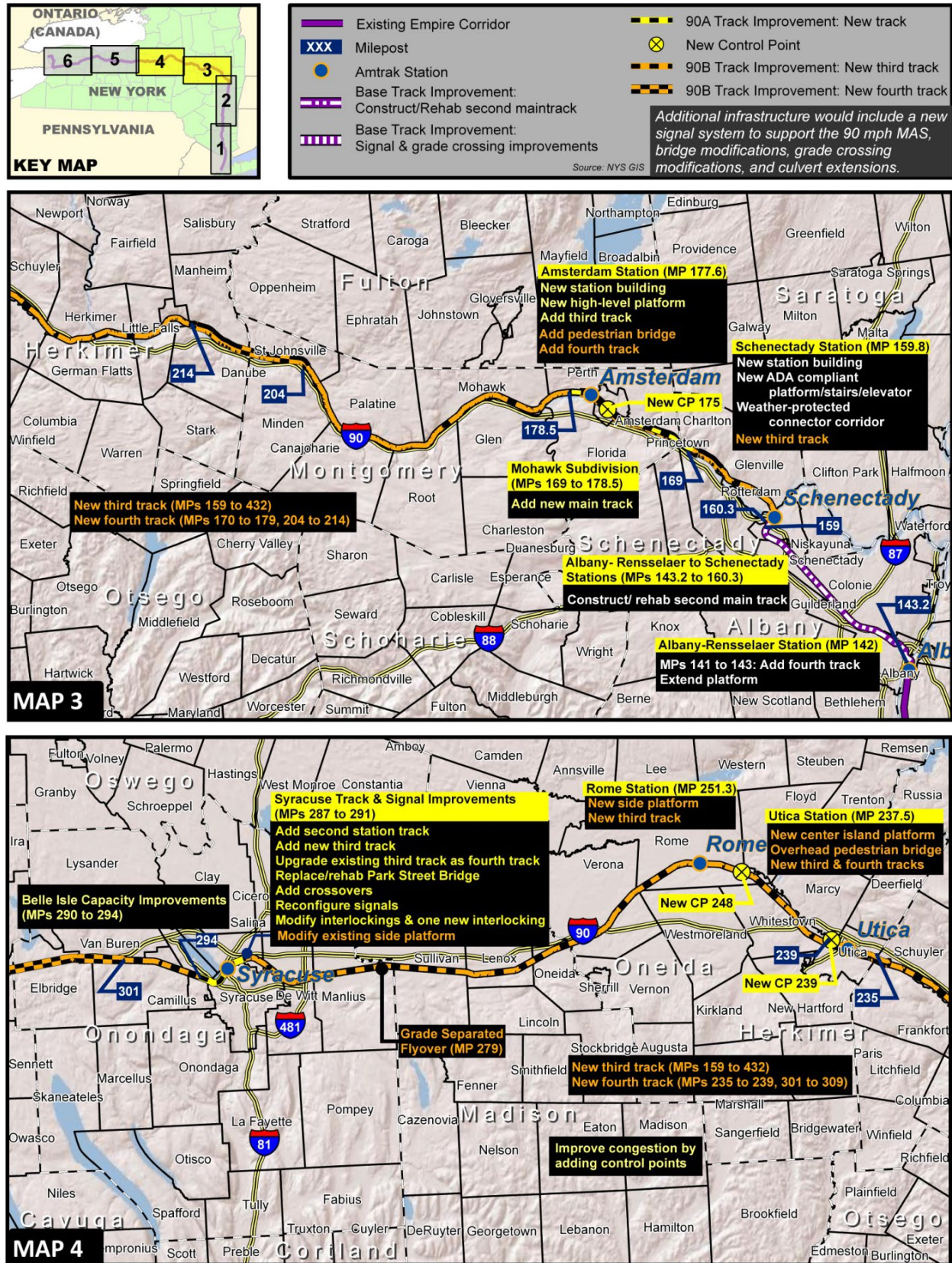


Exhibit 3-15—Alternative 90B, Preferred Alternative (Maps 3 and 4)

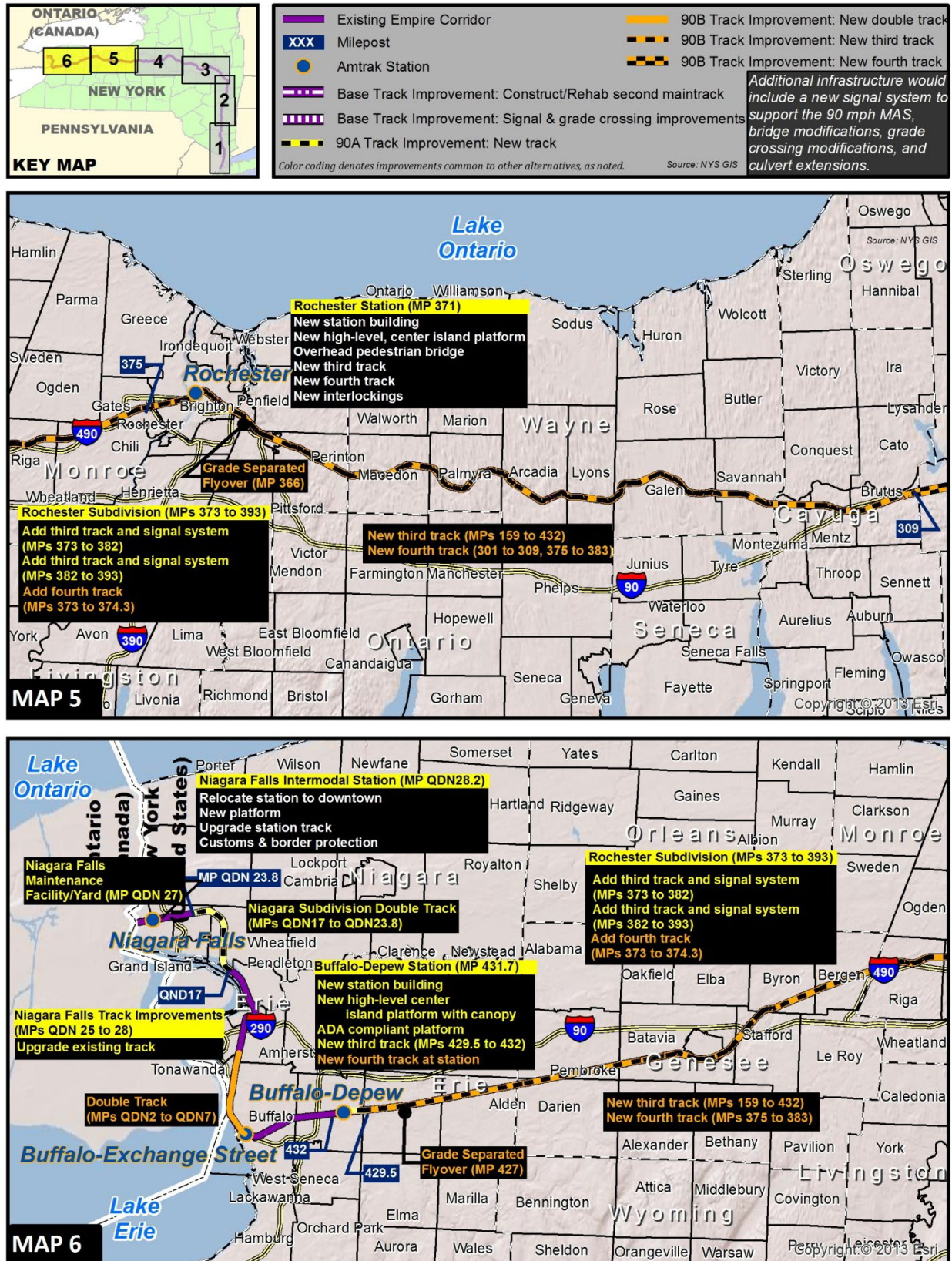


Exhibit 3-15—Alternative 90B, Preferred Alternative (Maps 5 and 6)

Potential property acquisitions that could require acquisition of a structure in addition to open land include: MP 168.33 (Glenville, Schenectady County), MP 210.8 (Manheim, Herkimer County), MP 215.6 (Little Falls, Herkimer County), MP 237.7 (Utica, Oneida County), and MP 286.4 (De Witt, Onondaga County).

Syracuse to Buffalo-Depew (MP 292-432)

Within this segment, Alternative 90B would provide the major improvements shown in Exhibit 3-4, Exhibit 3-5, and Exhibit 3-6, based on the conceptual design developed for this Tier 1 Final EIS.

No major track realignment areas would be needed to obtain an increase in operating speed.

Station improvement would be made at the following existing stations:

- **Rochester Station (completed in 2017)** – As proposed with the Base Alternative and Alternative 90A, new third and fourth tracks and interlockings will be provided, along with a new station building, new high-level center island platform, and overhead pedestrian bridge.
- **Buffalo-Depew Station** – As proposed with Alternative 90A, a new station building, high level center island platform and ADA compliant platform, ticket counter, restrooms, ramps, and railings, along with a new third track would be provided. Alternative 90B would also add a new fourth track.

Realignment of several existing roadways that are adjacent to the railroad right-of-way would be required over a total length of approximately four tenths of one mile in Onondaga and Cayuga counties. These realignments would be minor and as little as approximately ten feet horizontally.

Potential property acquisitions that could require acquisition of a structure in addition to open land include: MP 341.1 (Arcadia, Wayne County) and MP 377.6 (Gates, Monroe County).

Maximum Authorized Speed

Alternative 90B would provide for a MAS of 90 mph between Albany, Buffalo and Niagara Falls.

Service Frequency Enhancement

Alternative 90B would increase the frequency of Amtrak Empire Service. Amtrak service between New York City, and Albany-Rensselaer would increase to 17 daily round trips, adding four trains, a 30 percent gain above the current 13 trips in the Base Alternative. Service between Albany and Buffalo would increase to eight daily round trips, seven of which continue on to Niagara Falls, doubling the current four-trip service to Buffalo in the Base Alternative.

Schedule Enhancement: Express Service and Station Stops

No express service is proposed for Alternative 90B.

Equipment

Alternative 90B would add six train sets to increase the frequency of Amtrak service.

Capital Costs

The estimated capital cost of Alternative 90B, the Preferred Alternative, is \$5.97 billion.

Trip Time

With Alternative 90B, the trip time between New York City and Niagara Falls, based on westbound scheduled times, would be 7 hours and 36 minutes (7:36). This would be 32 minutes less than Alternative 90A's trip time and one hour and 30 minutes (1:30) less than the Base Alternative's trip time.

On-Time Performance

The OTP for Alternative 90B along the Empire Corridor West would be 95.4 percent in the year 2035.

Ridership

Alternative 90B is projected to increase ridership to 2.6 million passengers in the year 2035. This would be a gain of approximately 300,000 passengers above projected ridership for Alternative 90A and a gain of approximately one million passengers above projected ridership for the Base Alternative in 2035.

Revenue

Annual revenue for Alternative 90B is projected to be \$143 million.

Operations & Maintenance Costs

Operations and maintenance costs for Alternative 90B are estimated at approximately \$176 million per year.

Safety

The improvements included in Alternative 90B would result in an overall increase in safety for the traveling public. The increase in train ridership would translate to a decrease in highway traffic volume. With fewer cars on the road this would, in turn, naturally result in fewer traffic accidents and other safety gains. Moreover, Alternative 90B will add approximately 370 miles of additional trackage, including third and fourth track, which will provide better segregation of passenger rail and freight trains. This should reduce conflicts between passenger rail and freight trains and provide improvements in safety. Although there would be additional rail tracks built at some grade crossings, no new grade crossings would be added. Grade crossing warning system upgrades will be installed at all existing grade crossings to accommodate operations at the higher speeds. Safety system upgrades that could be considered include CCTV installations at grade crossings. All of the existing crossings will be converted to automatic systems for improved safety. The warning system at grade crossings will be integrated with the rail signal system. Costs for fencing for portions of the corridor on both sides of the right-of-way have been incorporated, which will provide improved safety by preventing trespassing within the right-of-way. Since the frequency of accidents, injuries, and deaths involving trains, especially with modern safety features at railroad grade crossings, is much lower than the frequency of accidents on highways, the overall number of accidents, injuries, and deaths would decrease due to the shift in travel from passenger cars to rail.

Passenger and freight trains are currently comingled on CSXT's right-of-way. CSXT has expressed concerns about comingling of passenger rail and freight on Empire Corridor.

The Preferred Alternative, Alternative 90B, will provide additional trackage to better segregate passenger rail and freight rail, thereby improving safety of rail transportation on the Empire Corridor. Approximately 370 miles of new track will consist largely of third track in the Mohawk Valley, where CSXT freight operates west of Albany. Alternative 90B would not increase the risk of an accident due to the proposed capital improvement projects. Alternative 90B would include improvements to the signaling system and Positive Train Control system, which would increase safety over existing conditions.

Implementation of safety measures, such as Positive Train Control (PTC), will be included in the design and construction of each of the alternatives. It is also anticipated that crash energy management measurements will be included in the design criteria for each concept alignment. CSXT's comments, including concerns regarding safety, are responded to in Appendix K, Comments and Responses for Railroads. During the Tier 2 assessments, additional coordination with CSXT will be performed to obtain input into the development of design plans.

The proposed track improvements would be designed to comply with American Railway Engineering and Maintenance-of-Way Association, Amtrak, and CSXT design criteria. Federal funding announced in 2017 for positive train control will improve safety for the route between Schenectady and Poughkeepsie, and Metro-North and the State of New York have advanced initiatives for PTC along the Hudson Line south of Poughkeepsie. Positive train control has also been implemented by CSXT west of Schenectady. A System Safety Plan will be prepared for approval for FRA prior to the start of system operation, in compliance with federal guidelines.

Freight Operations

Alternative 90B would include the Alternative 90A additional sections of track (with sections of third main track added in at least five locations and second track added in at least two locations) plus would add an additional 273 miles of third track and 39 miles of fourth track at five separate locations. These third and fourth main tracks would be placed at least 15 feet from the existing mainline, in the existing railbed that historically contained two tracks. These improvements are anticipated to improve freight trip times between Selkirk Yard in Albany and Buffalo by at least 5 minutes and up to 14 minutes. It is anticipated that this will increase freight capacity, as the rail simulation shows a decrease in freight delays, even with future anticipated freight increases. Future coordination with CSXT on professional dispatching and operations to reduce freight conflicts to maximize freight capacity will be performed.

The simulation of rail operations and the analysis of the potential impact of the program on freight operations demonstrate that the Preferred Alternative will have a positive effect on freight movements (see Exhibit 6-8). The additional capacity of increased mainline track in Alternatives 90B along with professional dispatching will result in positive benefits to freight traffic by decreasing delays and uncertainty. Service is demonstrated to improve for both passenger and freight train operations as passenger interference is minimized. The Rail Network Operations Simulation (Appendix D) used information provided by CSXT for both current and future train movements. With Alternative 90B, freight train delay-minutes would decrease the most among all alternatives, improving 10 percent over the Base Alternative and 6 percent over Alternative 110, the second best Build Alternative.

For Alternative 90B, the new passenger tracks along Empire Corridor West would generally be located on the north side. The line historically operated as a four-track system, and, as part of cost-

saving measures that started in the late 1950s, the two tracks that formerly existed on the north side were either removed or converted to sidings to save on maintenance. The new passenger tracks would be added in the former locations of these two tracks.

The primary factors for installing tracks on the north side include the ability to upgrade existing sidings in place to become the third and fourth tracks. The current tracks in operation are on the south side of the right-of-way, and there is availability of right-of-way on the north where this area previously had tracks in operation. Installation on the south side would also require property acquisition in places. In many cases, infringement on waterways, roadways, or other obstacles, such as bridge columns, would occur. Sections of the Erie Canal system or Mohawk River closely adjoin the existing railroad in several different locations.

During final design there will be a detailed evaluation of the need to construct additional crossovers, flyovers, and interlockings to allow freight trains running on the south side to crossover the new passenger mains to reach freight facilities on the north side.

3.3.4. Alternative 110

Alternative 110 uses 110 miles per hour as the maximum authorized speed and would construct new third and fourth main track and a new signal system to support the 110 mph speed. This alternative would use current vehicle technology with the possibility of integrated trainsets. Alternative 110 would fall into the FRA's "Regional" category.

Alternative 110 would improve service with the purchase of new train sets that would be used to increase the Empire Service to 17 daily round trip trains operating between New York City and Albany-Rensselaer. Eight daily round trips would be made between Albany and Buffalo, of which seven continue on to Niagara Falls. The key features of Alternative 110 are illustrated in Exhibit 3-16.

Physical Improvements

Alternative 110 would add approximately 384 miles of additional trackage to better segregate passenger rail and freight trains. Alternative 110 would add a dedicated third main passenger track between Schenectady (MP 159) and Buffalo-Depew (MP 432) (see Exhibit 3-17). It would also add a fourth passenger track in six locations (MP 174-184, MP 218-229, MP 235-239, MP 246-259, MP 310-320, and MP 388-399). Based on the conceptual-level design, the third main passenger track would be located on the north side of the existing tracks between MPs 159 and 366 and on the south side from MPs 366 to 432, generally 30 feet from the existing mainline and occupying a portion of the existing railroad bed that historically contained two tracks. Due to existing physical conditions that would make it impractical to achieve the 30-foot separation (between track centers), there would be sections of third main track located 15 feet from the existing track. In these instances, the MAS would be reduced to 90mph. The fourth tracks would be located between the dedicated third track and the existing track using 15-foot track centers, with a designated MAS of 90 mph.

Additional infrastructure would include:

- A new signal system to support the 110 mph MAS;
- Bridge modifications;
- Grade crossing modifications;
- Culvert extensions;

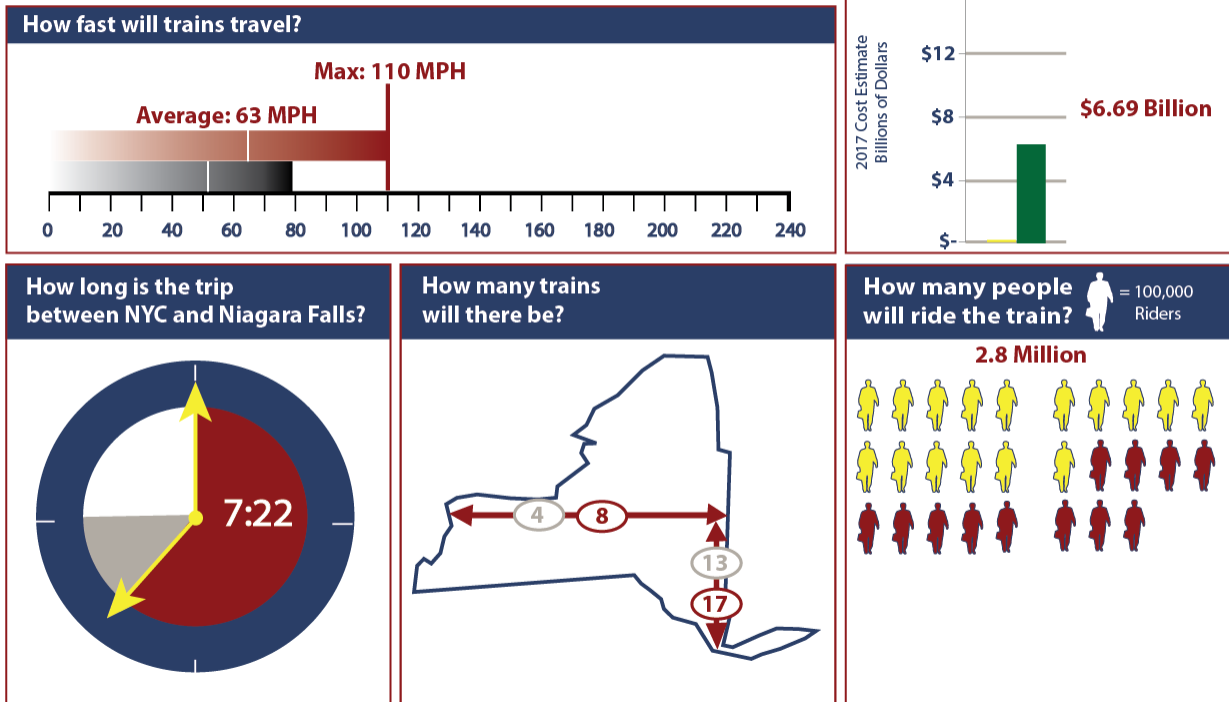
- Station improvements; and
- Two grade separated flyovers (MPs 279 and MP 366) where the third main passenger track passes over the existing freight tracks on an elevated structure, eliminating any potential conflicts with freight train movements.

The proposed flyovers are capital intensive, but would serve as an effective infrastructure improvement that could be designed to reduce passenger/freight interference. The concepts for the two flyovers presented in this Tier 1 Final EIS would be developed further in Tier 2 design. Other alternatives could be explored by developing a series of joint improvements both for station access and layouts and track/signal systems and alignment.

Exhibit 3-16—Alternative 110 – Key Features

BA 90A 90B **110** 125

Alternative: 110 - What Does It Do?



Note: Travel time between NYC and Niagara Falls presented in hours: minutes, based on westbound scheduled times.

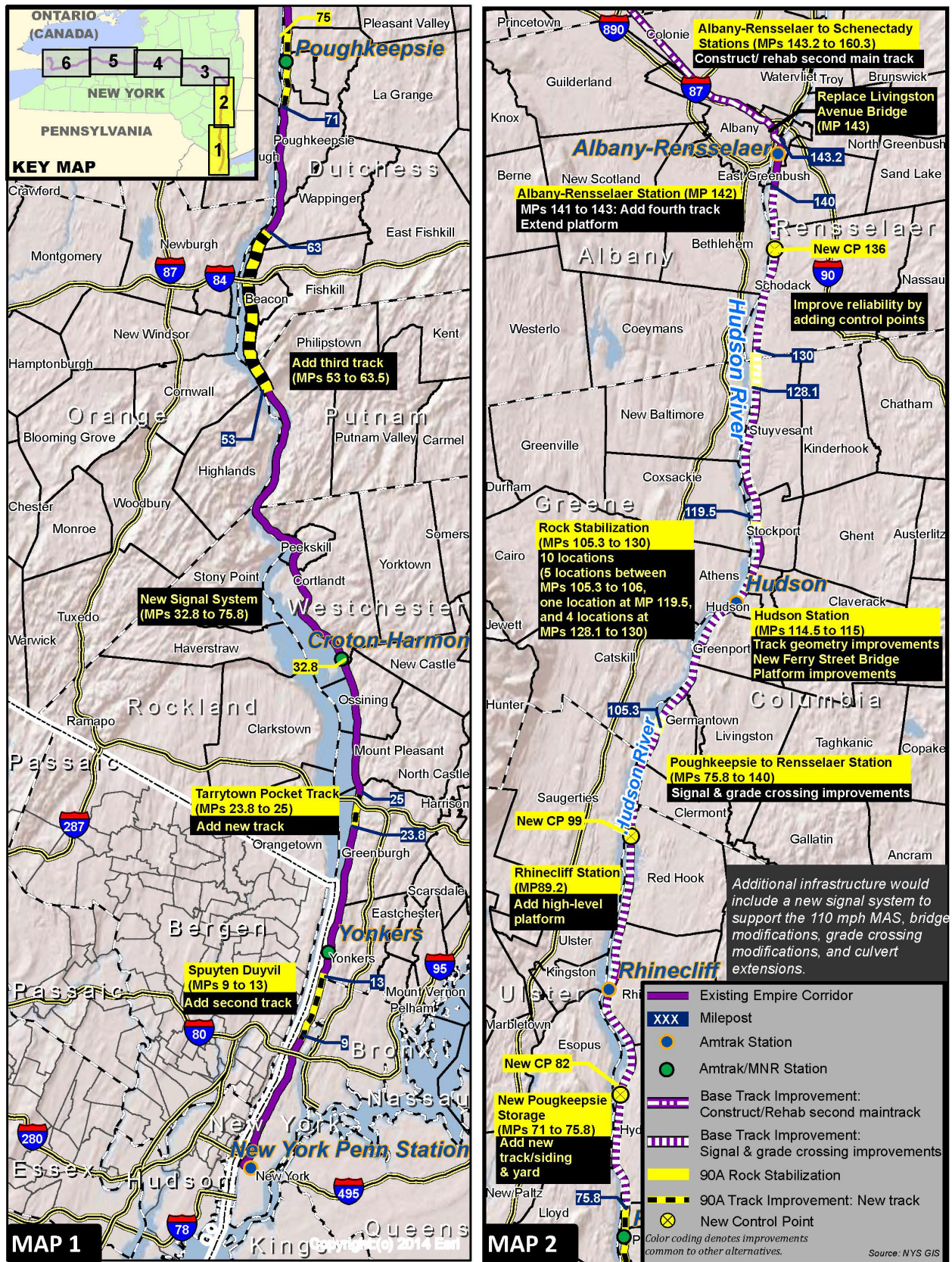


Exhibit 3-17—Alternative 110

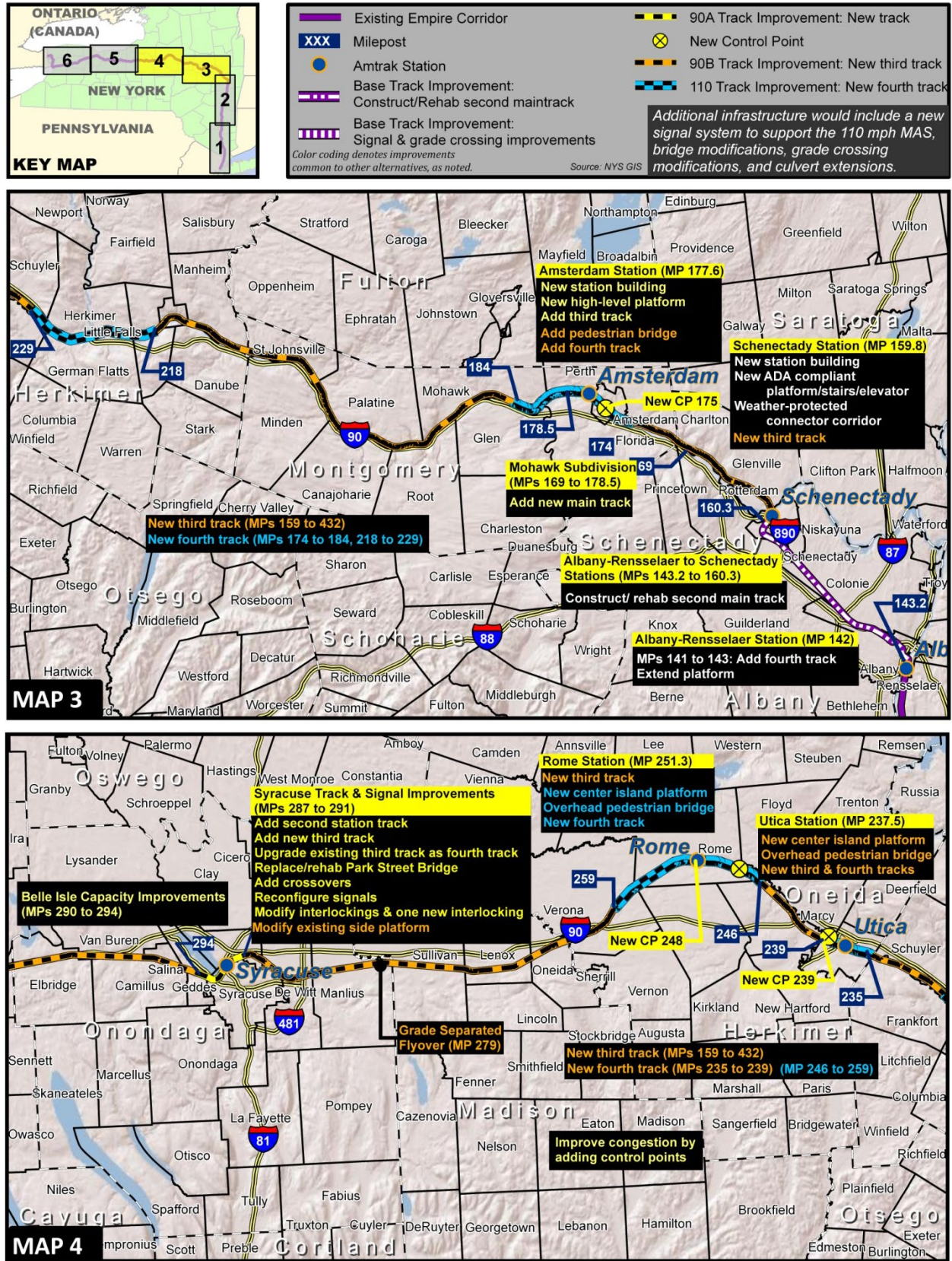


Exhibit 3-17—Alternative 110 (Maps 3 and 4)

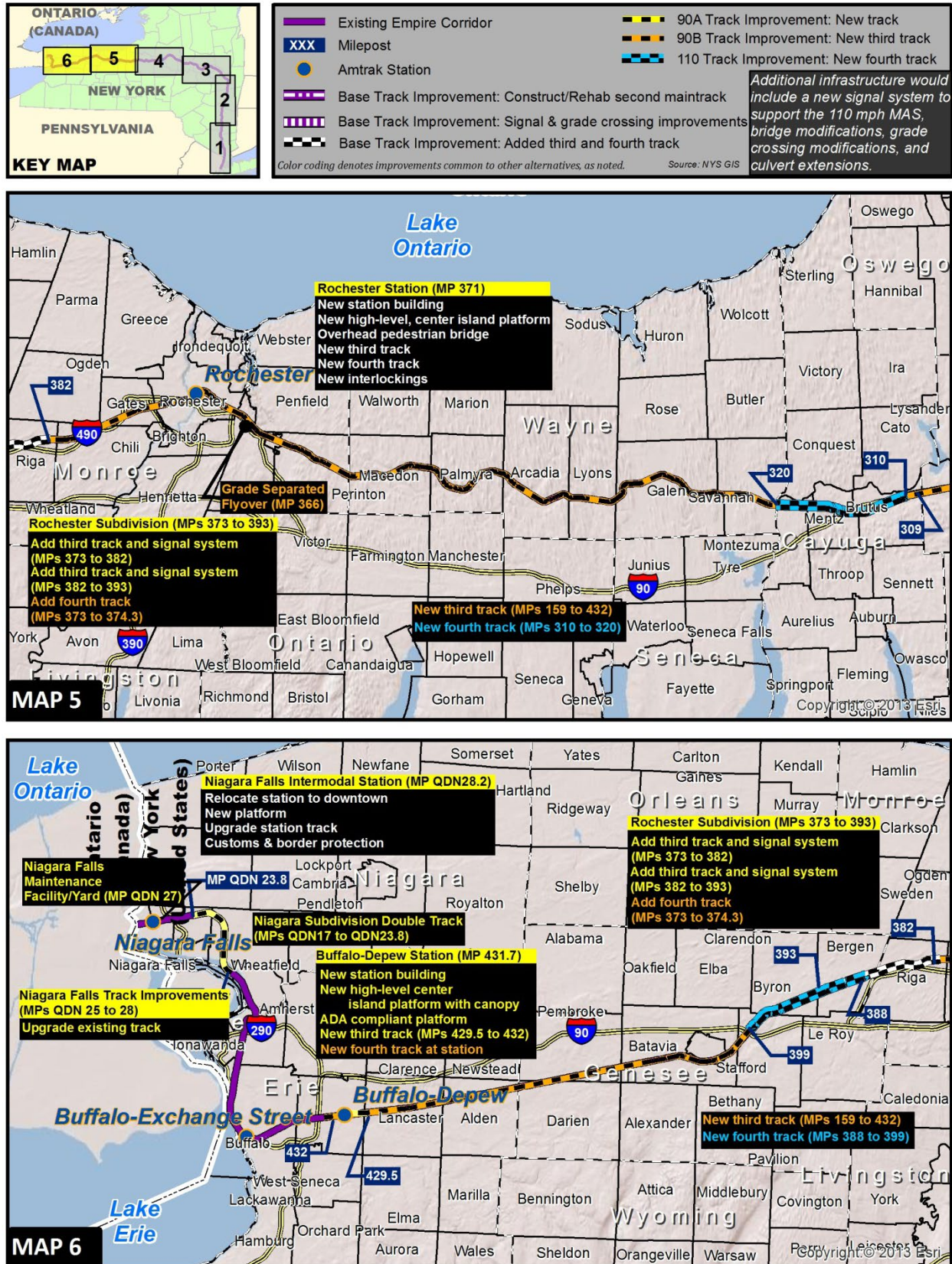


Exhibit 3-17—Alternative 110 (Maps 5 and 6)

Grade crossing modifications would be required to accommodate new tracks. Upgrades to existing grade crossing warning devices would be determined in subsequent design phases and in any Tier 2 documents.

Alternative 110 would be considerably different than Alternative 90B west of the Rochester Station. West of Rochester, Alternative 110 alignment would continue on the south side of the corridor. The dedicated third passenger track would run over the existing Track 2 alignment, and the existing freight tracks would be relocated to the north to maintain the desired track centers. This configuration would also eliminate an expensive grade separated flyover.

Locations for potential maintenance service roads have been identified along the entire corridor between MP 159 and MP 432. The specific need, size, and location of the service roads would be determined in subsequent design phases and Tier 2 studies. Some level of property acquisition would be required over substantial portions of Alternative 110, not only for service road construction, but to accommodate the geometry and track centers of the third and fourth main tracks.

Empire Corridor South

The improvements proposed with Alternative 90A on the Empire Corridor South also would be included in Alternative 110. The additional improvements provided with Alternative 110 would all be located on the Empire Corridor West.

Empire Corridor West

Exhibit 3-4, Exhibit 3-5, and Exhibit 3-6 summarize the characteristics and improvements proposed for Alternative 110, which also include improvements proposed for Alternative 90A. For descriptive purposes, the major physical improvement features of Alternative 110 are presented in two segments along the corridor. The first segment is between Schenectady and Syracuse (MPs 159-292), and the second is between Syracuse and Buffalo-Depew (MPs 292-432). Syracuse Station is the approximate center of the third track segment (133 miles from Schenectady to Syracuse and 140 miles from Syracuse to Buffalo-Depew).

Schenectady to Syracuse (MP 159-292)

Several areas would require larger track shifts to obtain an increase in operating speeds due to the existing geometry of the track: MP 168.4, MP 182.0, MP 192.7, MP 198.3, MP 199.3, MP 205.5, MP 211.6, and MP 221.8.

Station improvements would be made at the following existing stations:

- **Schenectady Station** – As proposed for the Base Alternative, new station building at the existing station, stairs and elevators to platforms, ADA compliant platform, and weather-protected corridor would be provided, and a new third track would be added as with Alternative 90B.
- **Amsterdam Station** – As proposed for Alternative 90A, a new station building at or near the existing Amtrak station, ADA compliant counter, restrooms, ramps, elevators would be provided, with a new high-level platform and new third track, and as with Alternative 90B an overhead pedestrian bridge and new fourth track would be added.
- **Utica Station** – As proposed for Alternative 90B, a new center island platform, overhead pedestrian bridge, and new third and fourth track would be provided.

- **Rome Station** – As proposed for Alternative 90B, a new third track would be provided, and a new fourth track, new center island platform, and overhead pedestrian bridge would be added under Alternative 110.
- **Syracuse Station** – As proposed for the Base Alternative, upgrades to the existing third track would be provided. As proposed for Alternative 90A, new second and third tracks, modified and one new interlocking, and added crossovers and reconfigured signals would be provided, in addition to rehabilitation/replacement of the Park Street Bridge. As proposed for Alternative 90B, a modified existing side platform would be provided.

Alternative 110 also would require realignment of several existing roadways that are adjacent to the railroad right-of-way over a total length of approximately seven miles. The roadway realignments would be required where Route 5 and other roadways closely adjoin the railroad in the section between Schenectady and Onondaga counties. Most of these realignments would be minor and as little as approximately ten feet horizontally. Other roadway realignments would be more substantial, could range in excess of 50 feet horizontally, and could potentially involve property acquisition for the roadway relocation. Coordination with local authorities and FHWA, as appropriate, will occur in individual project planning and Tier 2 efforts.

Potential property acquisitions that could require acquisition of a structure in addition to open land include the following locations: MP 168.3 (Glenville, Schenectady County), MP 184.6 (Mohawk, Montgomery County), MP 186.3 (Mohawk, Montgomery County), MP 191.7 (Mohawk, Montgomery County), MP 198.1 (Palatine, Montgomery County), MP 200.6 (Palatine, Montgomery County), MP 207.5 (St. Johnsville, Montgomery County), MP 210.8 (Manheim, Herkimer County), MP 215.1 (Manheim, Herkimer County), MP 226.9 (Herkimer, Herkimer County), MP 228.0 (Schuyler, Herkimer County), MP 230.8 (Schuyler, Herkimer County), MP 237.2 (Utica, Oneida County), and MP 286.4 (De Witt, Onondaga County).

Syracuse to Buffalo-Depew (MP 292-432)

One area would require larger track shifts to obtain an increase in operating speeds due to the existing geometry of the track, MP 355.2.

Station improvements would be made at the following existing stations:

- **Rochester Station (completed in 2017)** – As proposed with the Base Alternative, new third and fourth tracks and interlockings will be provided, along with a new station building, new high-level center island platform, and overhead pedestrian bridge.
- **Buffalo-Depew Station** – As proposed with Alternative 90A, a new station building, high level center island platform and ADA compliant platform, ticket counter, restrooms, ramps, and railings, along with new third track, would be provided. As proposed with Alternative 90B, a new fourth track would be provided.

Alternative 110 also would require realignment of several existing roadways in Onondaga and Cayuga counties that are adjacent to the railroad right-of-way over a total length of approximately four tenths of one mile. These realignments would be minor and as little as approximately ten feet horizontally.

Potential property acquisitions that could require acquisition of a structure in addition to open land include: MP 341.1 (Arcadia, Wayne County), MP 361.4 (Perinton, Monroe County), MP 377.7 (Gates, Monroe County), and MP 389.1 (Bergen, Genesee County).

Maximum Authorized Speed

Alternative 110 would provide for a MAS of 110 mph between Albany, Buffalo and Niagara Falls.

Service Frequency Enhancement

Alternative 110 would increase the frequency of Amtrak Empire Service. Amtrak service between New York City and Albany would increase to 17 daily round trips, adding four trains, a 30 percent gain above the current 13 trips in the Base Alternative. Service between Albany and Buffalo would increase to eight daily round trips, of which seven would continue on to Niagara Falls, doubling the current four-trip service to Buffalo in the Base Alternative.

Schedule Enhancement: Express Service and Station Stops

No express service is proposed for Alternative 110.

Equipment

Alternative 110 would add six train sets to increase the frequency of passenger rail service.

Capital Costs

The estimated capital cost of Alternative 110 is \$6.69 billion.

Trip Time

With Alternative 110, the trip time between New York City and Niagara Falls, based on westbound scheduled times, would be 7 hours and 22 minutes (7:22). This would be one hour and 44 minutes (1:44) less than the Base Alternative's trip time.

On-Time Performance

The OTP for Alternative 110 along the Empire Corridor West would be 94.9 percent in the year 2035.

Ridership

Alternative 110 is projected to increase ridership to 2.8 million passengers in the year 2035. This would be a gain of approximately 1.2 million passengers above projected ridership for the Base Alternative in 2035.

Revenue

Annual revenue for Alternative 110 is projected to be \$153 million.

Operation & Maintenance Costs

Operations and maintenance costs for Alternative 110 are estimated at approximately \$178 million per year.

Safety

The improvements included in Alternative 110 would result in an overall increase in safety for the traveling public. The increase in train ridership would translate to a decrease in highway traffic volume. With fewer cars on the road this would, in turn, naturally result in fewer traffic accidents and other safety gains. Moreover, Alternative 110 will add approximately 384 miles of additional trackage, including third and fourth track, which will provide better segregation of passenger rail and freight trains. This should reduce conflicts between passenger rail and freight trains and provide improvements in safety. These tracks will be spaced 15 feet further from the existing tracks than Alternative 90B (for a 30-foot separation) to accommodate trains operating at higher speeds. Although there would be additional rail tracks built at some grade crossings, no new grade crossings would be added. Grade crossing warning system upgrades will be installed at all existing grade crossings to accommodate operations at the higher speeds. Safety system upgrades that could be considered include CCTV installations at grade crossings. All of the existing crossings will be converted to automatic systems for improved safety. The warning system at grade crossings will be integrated with the rail signal system. Costs for fencing for portions of the corridor on both sides of the right-of-way have been incorporated, which will provide improved safety by preventing trespassing within the right-of-way. Since the frequency of accidents, injuries, and deaths involving trains, especially with modern safety features at railroad grade crossings, is much lower than the frequency of accidents on highways, the overall number of accidents, injuries, and deaths would decrease due to the shift in travel from passenger cars to rail.

Passenger and freight trains are currently comingled on CSXT's right-of-way. CSXT has expressed concerns about comingling of passenger rail and freight on Empire Corridor.

Alternative 110 will provide additional trackage to better segregate passenger rail and freight rail, thereby improving safety of rail transportation on the Empire Corridor. Approximately 384 miles of new track will consist largely of third track in the Mohawk Valley, where CSXT freight operates west of Albany. Alternative 110 would not increase the risk of an accident due to the proposed capital improvement projects. Alternative 110 would include improvements to the signaling system and Positive Train Control system, which would increase safety over existing conditions.

Implementation of safety measures, such as Positive Train Control (PTC), will be included in the design and construction of each of the alternatives. It is also anticipated that crash energy management measurements will be included in the design criteria for each concept alignment. CSXT's comments, including concerns regarding safety, are responded to in Appendix K, Comments and Responses for Railroads. During the Tier 2 assessments, additional coordination with CSXT will be performed to obtain input into the development of design plans.

The proposed track improvements would be designed to comply with American Railway Engineering and Maintenance-of-Way Association, Amtrak, and CSXT design criteria. Federal funding announced in 2017 for positive train control will improve safety for the route between Schenectady and Poughkeepsie, and Metro-North and the State of New York have advanced initiatives for PTC along the Hudson Line south of Poughkeepsie. Positive train control has also been implemented by CSXT west of Schenectady. A System Safety Plan will be prepared for approval for FRA prior to the start of system operation, in compliance with federal guidelines.

Freight Operations

Alternative 110 would include the Alternative 90A additional sections of track (with sections of third main track added in at least five locations and second track added in at least two locations) plus would add an additional 273 miles of third track and 59 miles of fourth track. These third and fourth main tracks would generally be placed at least 30 feet from the existing mainline, where there is available right-of-way, in the existing railbed that historically contained two tracks. These improvements are anticipated to improve freight trip times between Selkirk Yard in Albany and Buffalo by at least 10 minutes and up to 20 minutes. It is anticipated that this will increase freight capacity, as the rail simulation shows a decrease in freight delays, even with future anticipated freight increases. Future coordination with CSXT on professional dispatching and operations to reduce freight conflicts to maximize freight capacity will be performed.

The simulation of rail operations and the analysis of the potential impact of the program on freight operations demonstrate that Alternative 110 will have a positive effect on freight movements (see Exhibit 6-8). The additional capacity of increased mainline track in Alternatives 110 along with professional dispatching will result in positive benefits to freight traffic by decreasing delays and uncertainty. Service is demonstrated to improve for both passenger and freight train operations as passenger interference is minimized. The Rail Network Operations Simulation (Appendix D) used information provided by CSXT for both current and future train movements.

For Alternative 110, the new passenger tracks along Empire Corridor West would generally be located on the north side. The line historically operated as a four-track system, and, as part of cost-saving measures that started in the late 1950s, the two tracks that formerly existed on the north side were either removed or converted to sidings to save on maintenance. The new passenger tracks would be added in the former locations of these two tracks.

The primary factors for installing tracks on the north side include the ability to upgrade existing sidings in place to become the third and fourth tracks. The current tracks in operation are on the south side of the right-of-way, and there is availability of right-of-way on the north where this area previously had tracks in operation. Installation on the south side would also require property acquisition in places. In many cases, infringement on waterways, roadways, or other obstacles, such as bridge columns, would occur. Sections of the Erie Canal system or Mohawk River closely adjoin the existing railroad in several different locations.

During final design there will be a detailed evaluation of the need to construct additional crossovers, flyovers, and interlockings to allow freight trains running on the south side to crossover the new passenger mains to reach freight facilities on the north side.

3.3.5. Alternative 125

Alternative 125 uses 125 miles per hour as the maximum authorized speed and would be the first speed threshold for electrically powered trains. Alternative 125 would construct an entirely new two-track grade-separated electrified corridor (with overhead catenary wire for power delivery to the trains) between Albany and Buffalo dedicated to high-speed passenger rail service and would fall into FRA's "Core Express" category. The route corridor is approximately 283 miles in length from Albany/Rensselaer Station to Buffalo Exchange Street Station.

The current Empire Corridor use of dual mode (electric and diesel) locomotives would continue in Alternative 125, although the electric propulsion type (AC) would differ from that used at present

(DC) on the tracks surrounding Penn Station New York. Trains would operate in diesel mode on the existing Hudson Line Corridor between Albany/Rensselaer Station and a point just north of Penn Station New York, where they would switch over to the existing AC-powered overhead catenary for operation to the station and servicing facility.

Within the densely-developed areas around Albany, Syracuse, Rochester, and Buffalo, the new corridor would roughly parallel the existing corridor on a combination of new and existing right-of-way to provide express service (15 round trips) to existing stations in these cities. The existing four daily round trips to Buffalo (of which three continue on to Niagara Falls) would be maintained on the existing right-of-way. Between Albany and Buffalo, the new corridor would follow an alignment designed to balance the competing demands of operating speed, cost and environmental impacts.

The key features of Alternative 125 are illustrated in Exhibit 3-18. The travel times assume that one station in a new central location would be provided in Buffalo. For the purposes of this Tier 1 Final EIS, the existing Buffalo-Depew and Exchange Street stations are assumed to be in place. Station sites would be further defined in Tier 2. The average speeds reflect the 125 mph express service speeds (including Hudson Line/Empire Corridor South) and do not include speeds for the existing Amtrak service that would also be maintained. The weighted average speed of both services would be 63 mph, but only Schenectady, Amsterdam, Rome, and Utica passengers (a small percentage of Empire Corridor passengers) will not experience high-speed dedicated service. Required infrastructure includes roadbed, track, viaducts and bridges, cuts and embankments, access roads, railroad systems, maintenance facilities, and other support facilities. Exhibit 3-4, Exhibit 3-5, and Exhibit 3-6 summarize the characteristics and improvements proposed for Alternative 125, which also include improvements proposed for Alternative 90A that extend along the Hudson Line or Niagara Branch.

Physical Improvements

Empire Corridor South

The improvements proposed with Alternative 90A on the Empire Corridor South also would be included in Alternative 125. Due to the developed nature of the corridor along the Hudson Line, it is assumed that the maximum speeds along this section would be 110 mph and that the improvements proposed are the same as for Alternatives 90A, 90B, and 110. The additional improvements provided with Alternative 125 would all be in the Empire Corridor West segment.

Empire Corridor West

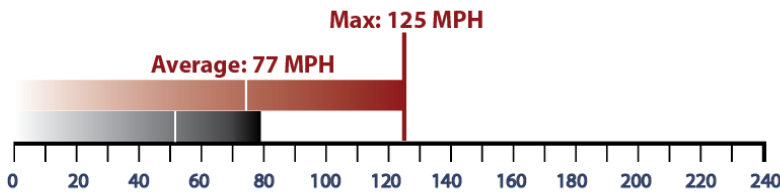
Approximately 83 percent of Alternative 125 would be along new electrified corridor (with overhead catenary) between Buffalo and Albany (see Exhibit 3-19). Exhibit 3-20 summarizes the existing and new corridor lengths for Alternative 125. Alternative 125 extends north to Albany-Rensselaer Station, then doubles back to a new river crossing across the Hudson River, following the New York State Thruway (I-87/I-90) and largely bypassing the cities of Albany and Schenectady. Alternative 125 would also include new right-of-way on a more direct route between Rensselaer County and a

Exhibit 3-18—Alternative 125 – Key Features

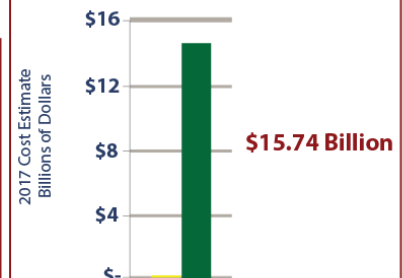
BA 90A 90B 110 **125**

Alternative: 125 - What Does It Do?

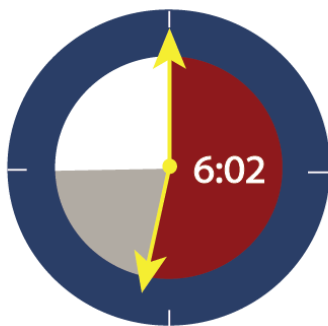
How fast will trains travel?



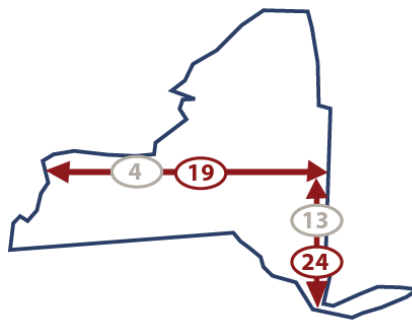
How much will it cost?



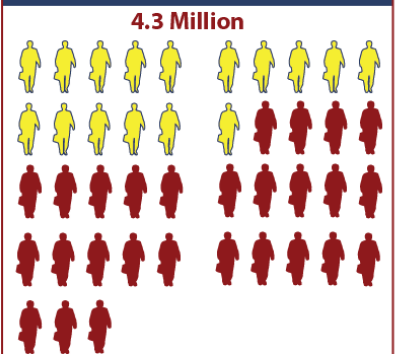
How long is the trip between NYC and Niagara Falls?



How many trains will there be?



How many people will ride the train? = 100,000 Riders



Note: Travel time between NYC and Niagara Falls presented in hours: minutes, based on express service, westbound scheduled times. The average speed for the “Regional Service” (or existing Amtrak service) that would be maintained on the existing Empire Corridor would be 53 mph, with a weighted average of 63 mph for both services. Travel time for regional service would be 8:40.

point five miles east of the Buffalo-Depew Station, merging back with the Empire Corridor over two 15-mile and 16-mile segments centered on Syracuse and Rochester, respectively. Alternative 125 would involve construction of a total of 236 miles of double track on new corridor alignment along three different segments: Rensselaer to Syracuse, Syracuse to Rochester, and Rochester to Buffalo. The alignment would be located within the existing Empire Corridor right-of-way through the cities of Syracuse, Rochester, and Buffalo.

Alternative 125 concept is a new grade separated (from highway and other railroads) corridor for the exclusive use of high-speed passenger trains. To achieve the grade separation, it is assumed that a certain amount of viaduct is required in the urban areas.

Where Alternative 125 extends through Rensselaer and Albany Counties along the New York State Thruway and through the downtown areas of Syracuse, Rochester, and Buffalo (approaching Buffalo Exchange Street Station), the tracks would be elevated, and Alternative 125 would directly service the existing stations serving these cities. The remainder of the track would be largely at grade through primarily rural or undeveloped lands, and no new stations along the new alignment sections are proposed.

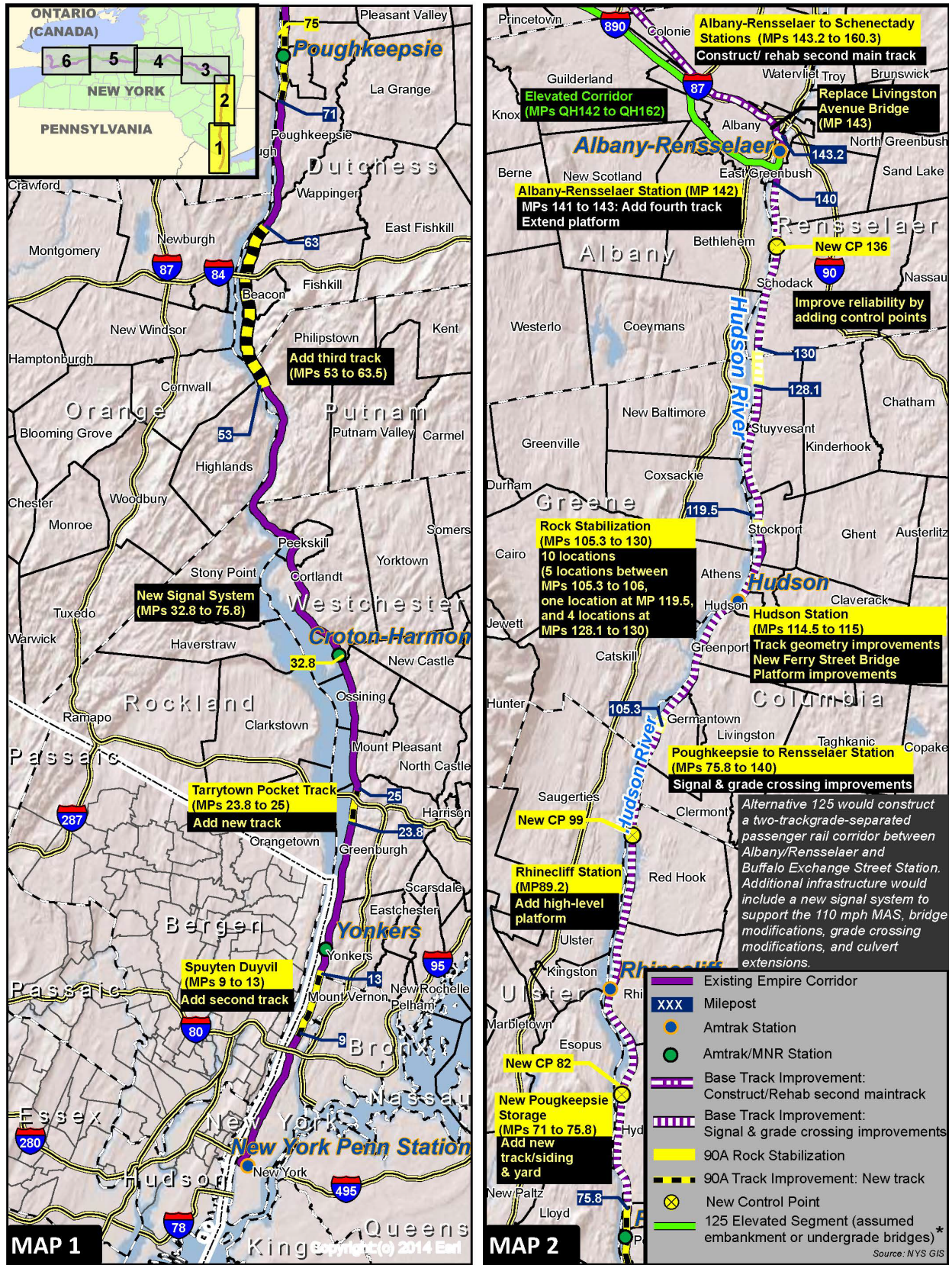


Exhibit 3-19—Alternative 125

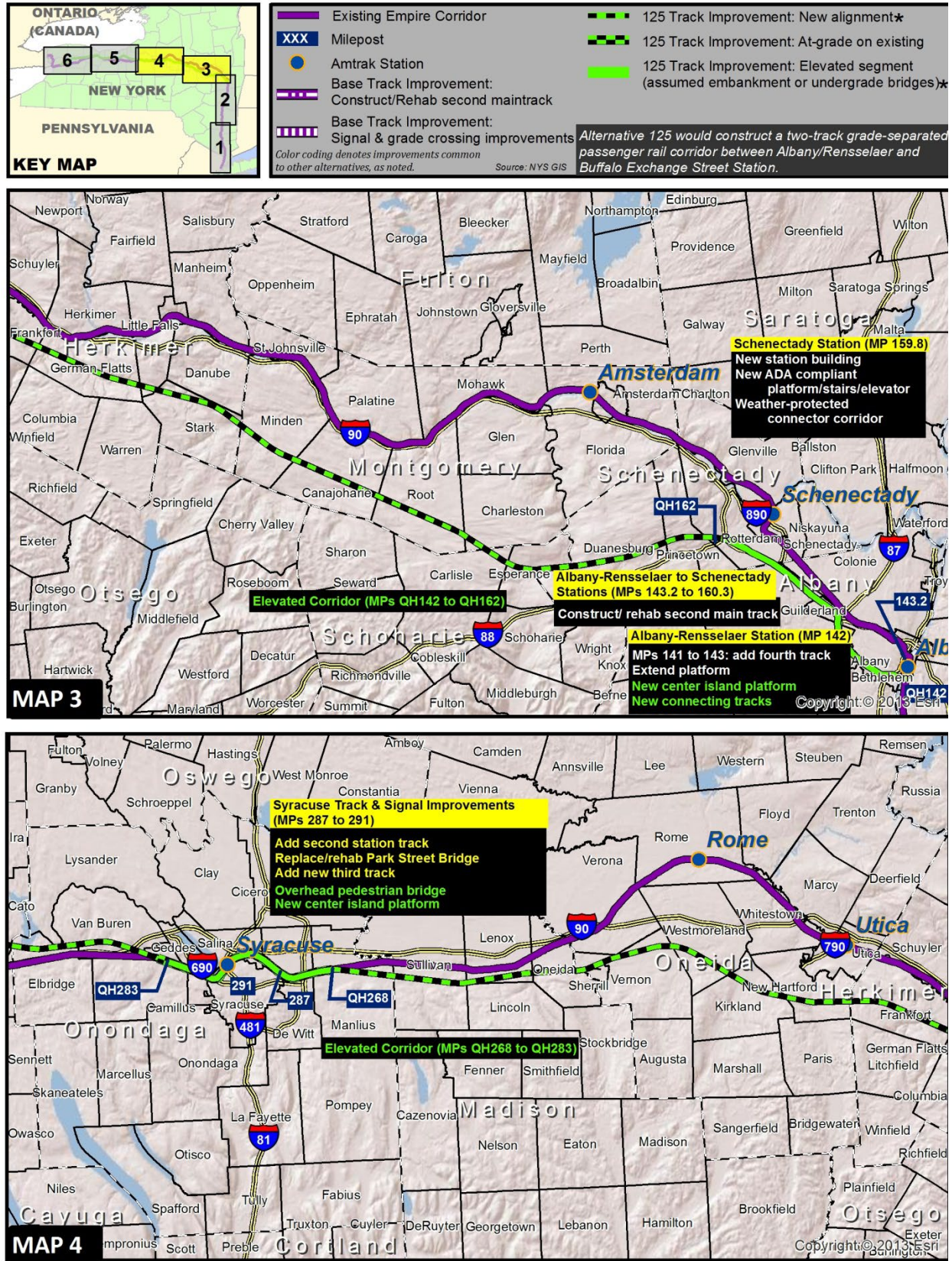


Exhibit 3-19—Alternative 125 (Maps 3 and 4)

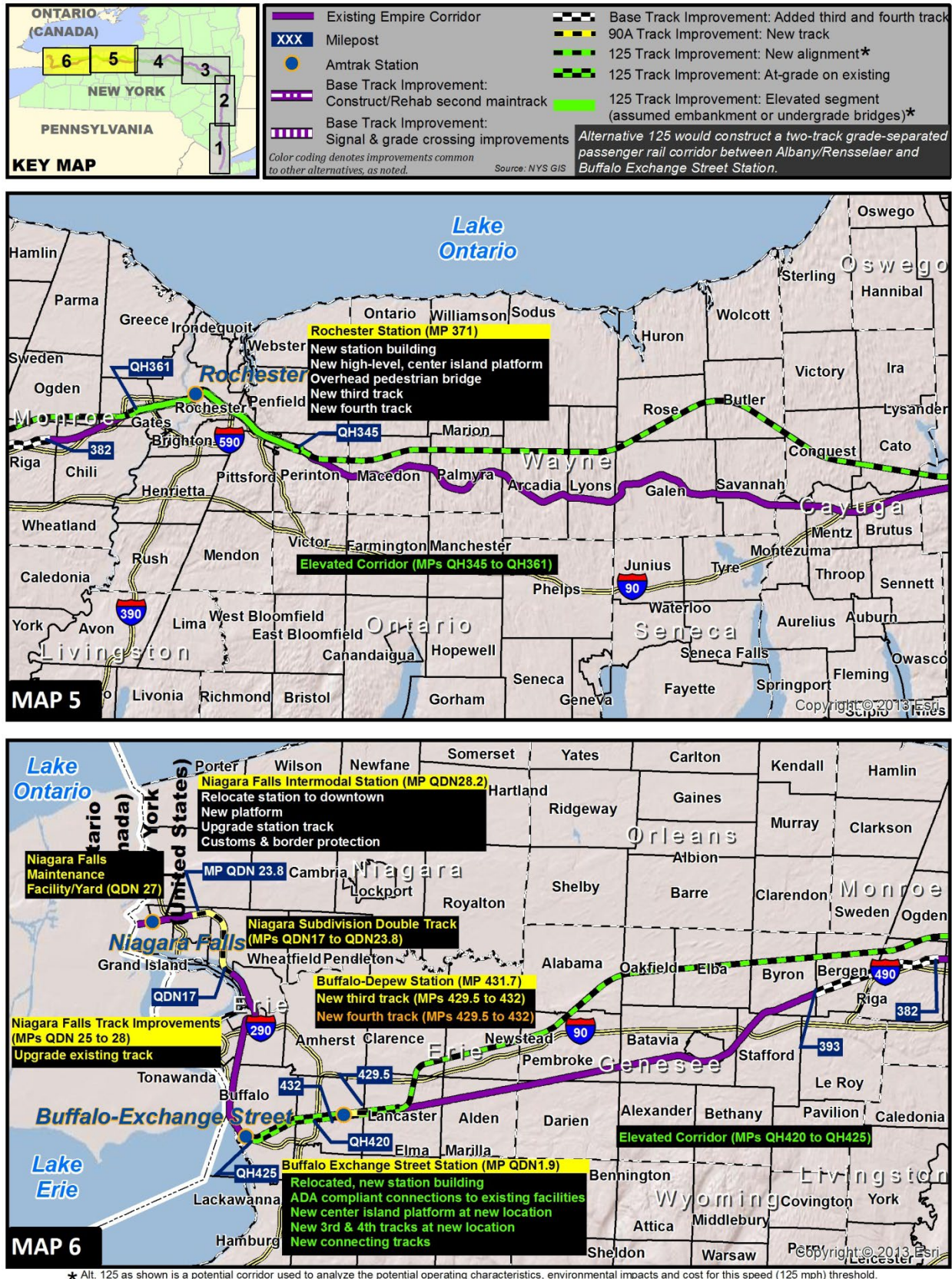


Exhibit 3-19—Alternative 125 (Maps 5 and 6)

Exhibit 3-20—Alternative 125 – Existing and New Corridor Mileage and Elevated Tracks

	Total Route Length (Miles)	Along “New” Corridor (Miles)	Along Existing Empire Corridor (Miles)
Buffalo to Albany:	283	236	47
Buffalo to Rochester	70	48	22
Elevated Track	11		11
Rochester to Syracuse	77	62	15
Elevated Track	15		15
Syracuse to Albany	136	126	10
Elevated Track	30		30

It is assumed that grade separation will be achieved by elevating the tracks above the existing grade on a combination embankment and elevated structures. The structurally elevated structures are assumed to be supported by columns or viaduct. It is assumed that a total of 57 miles of elevated track will be required based on Tier 1 analysis, although further design and definition would be part of Tier 2 assessments.

For the purposes of evaluating potential impacts, operating characteristics, and costs of Alternative 125, a potential corridor on new right-of-way was identified between the sections of the route where it would follow the existing Empire Corridor to connect with existing stations at Albany-Rensselaer, Syracuse, Rochester, and Buffalo. This corridor was located using available Geographic Information System (GIS) mapping of environmental constraints, topography, and aerial photography. If Alternative 125 had been selected for further consideration in Tier 2, this corridor location would have been further refined to avoid community and environmental resources to a greater extent.

Alternative 125 extends north to Albany-Rensselaer Station, then doubles back to a new river crossing across the Hudson River, following the New York State Thruway (I-87/I-90) and largely bypassing the cities of Albany and Schenectady. Alternative 125 would involve construction of a total of 236 miles of double-track on new alignment along three different segments: Rensselaer to Syracuse, Syracuse to Rochester, and Rochester to Buffalo. The alignment would be located within the existing Empire Corridor right-of-way through the cities of Syracuse, Rochester, and Buffalo.

Alternative 125 incorporates the improvements proposed for Alternative 90A, 90B, and 110 along Empire Corridor South. However, along Empire Corridor West, existing Empire Service to all existing stations will be maintained, but express service along Alternative 125 would only service Albany-Rensselaer, Syracuse, Rochester, and Buffalo Exchange Street stations. Alternative 125 would not include those station improvements proposed for Alternatives 90B and 110 that would be bypassed by the express service. The station improvements that would be provided along Empire Corridor West for Alternative 125 are described below, and Exhibit 3-21 shows the Alternative 90A improvements that would be included in Alternative 125.

- **Schenectady Station** – This station would be bypassed by Alternative 125 express service, although existing service would be maintained. As proposed for the Base, new station building,

stairs and elevators to platforms, ADA compliant platform, and weather-protected corridor would be provided.

- **Amsterdam Station** – This station would be bypassed by Alternative 125 express service, although existing service would be maintained. No improvements are proposed for Amsterdam Station, which would be reconstructed under Alternatives 90A, 90B, and 110.
- **Utica and Rome Stations** – These stations would be bypassed by Alternative 125 express service, although existing service would be maintained. No improvements are proposed for Alternative 125 at Utica and Rome stations, which would be provided with new platform, tracks, and overhead pedestrian bridge for Alternatives 90A, 90B, and 110.
- **Syracuse Station** – As proposed for Alternative 90A, new second and third tracks would be provided, in addition to rehabilitation/replacement of the Park Street Bridge. Alternative 125 would add a new center island platform and an overhead pedestrian bridge.
- **Rochester Station (under construction)** – As proposed with the Base Alternative, new third and fourth tracks, new station building, new high-level center island platform, and an overhead pedestrian bridge would also be provided under Alternative 125.
- **Buffalo-Depew Station** – This station would be bypassed by Alternative 125 express service, although existing service would be maintained. As proposed with Alternative 90A, new third track would be provided and as proposed with Alternative 90B, new fourth track would be provided.
- **Buffalo Exchange Street Station** – Buffalo Exchange Street station will be relocated and a new station building provided for Alternative 125. In addition, ADA compliant connections to existing facilities, a new center island platform at a new location, and new third and fourth tracks and connecting tracks would be provided.

Maximum Authorized Speed

Alternative 125 would provide for a MAS of 125 mph between Albany/Rensselaer and Buffalo.

Service Frequency Enhancements

Alternative 125 would provide for a total of 19 daily round trips between Albany-Rensselaer Station and Buffalo, compared to the existing four daily round trips to Buffalo, of which six would continue to Niagara Falls. Four daily round trips would be retained on the existing corridor (of which three continue to Niagara Falls) and 15 daily round trips that will run express between major cities (Albany-Rensselaer, Syracuse, Rochester, and Buffalo) would be added on the new corridor.

Exhibit 3-21—Alternative 90A Rail Improvements included in Alternative 125

Project Name (Milepost)	Project ID	Project Description	“Necessary” for 125 Project
Amtrak West Side Connection Spuyten Duyvil Second Track (MPs 9 to 13)	SRP-1	Increase capacity by adding a second track.	Yes
Metro-North – Tarrytown Pocket Track / Interlocking (MPs 23.8 to 25.0)	SRP-2	Increase capacity by adding a new track to improve speed, travel time, OTP, safety and reduce delay. Allows for increased future frequency.	Yes
Metro-North New Signal System (CP 33 to CP 75) (MPs 32.8 to 75.8)	ES-12	Signal system improvements to provide operating benefits in capacity, reliability and schedule recovery.	Yes
Metro-North – New Third Track (CP 53 to CP 63) (MPs 53 to 63.5)	SRP-3	Increase capacity, reduce delay and improve schedule and operational reliability by providing the capability for freight trains to meet/pass.	Yes
Metro-North Poughkeepsie Yard / Storage Facility Track / Signals (CP 71 to CP 75) (MPs 71 to 75.8)	ES-13	New track/siding and yard will help improve speed, travel time, OTP and safety and reduce delay. Allows for increased future frequency.	Yes
Rhinecliff Station Improvements (MP 89.2)	SRP-11	Improve reliability by adding high-level platforms to cut station dwell time in half.	Yes
Hudson Line Reliability Improvements New Control Points (CP 82, CP 99, CP 136) (MPs 82 to 136)	ES-05	Improve reliability by reducing spacing of interlockings, improving dispatching options to meet or pass trains, which will decrease delays.	Yes
Hudson Line Reliability Improvements Rock Slope Stabilization (10) (MPs 105.3 to 130)	ES-04	Improve reliability by removing / stabilizing rock slopes at 10 locations (5 locations between, MPs 105.3-106, one location at MP 119.5, and 4 locations at MPs 128.1-130), upgrading slide detector fences to improve safety, and reduce delays.	Yes
Hudson Station / Track Geometry Improvements (MPs 114.5 to 115)	ES-14	Improve reliability through track realignment / new Ferry St. bridge, which will improve speed and safety for station access, ADA-compliant platform; eliminate delays by supporting two trains serving the station at the same time.	Yes
Livingston Avenue Bridge (LAB) Replacement Project (MPs 143)	ES-15	Replace deficient moveable bridge to improve safety / reliability, travel time, remove speed / weight restrictions, increase capacity.	Yes
Mohawk Subdivision – New Main Track (CP 169 to CP 179) (MPs 169 to 178.5)	EW-14a	Increase capacity by adding a dedicated 110 mph passenger track to increase frequencies and provide additional capacity / reliability.	No

Exhibit 3-21—Alternative 90A Rail Improvements included in Alternative 125

Project Name (Milepost)	Project ID	Project Description	“Necessary” for 125 Project
Mohawk Subdivision Congestion Relief (CP 175, CP 239 & CP248) (MPs175 to 294)	EW-05	Improve travel times, operational capacity and safety by upgrading automatic block signals, control points and interlocking.	No
Amsterdam Station Improvements (MP 177.6)	EIS-1	Improve reliability by constructing a new station with high level / double edge platform. Improve train operations and reduce dwell time.	No
Belle Isle Capacity Improvements (CP 290 to CP 293) Syracuse Station - Track Improvements (MPs 290 to 294)	EIS-6	Increase capacity by providing additional freight train queuing capability and ability for freight trains to operate between DeWitt and Belle Isle Pocket Yard without occupying existing main line. Add second station track at Syracuse Station and reconfigure signals at the station including one new interlocking.	Station work is required for 125 but would be different work than described here
Rochester Subdivision Reliability Third Main Track (CP 373 to CP 382) (MPs 373 to 382)	EW-16	Increase capacity with third main track and signal system to improve speed, frequency, safety and reliability.	Station work is required for 125 but would be different work than described here
Rochester Subdivision Third Main Track (MP 382 to 393)	EW-20	New third main track and signal system to improve speed, frequency, and reliability.	No
Buffalo Depew Station Improvements (MPs 429.5 to 432.5)	EIS-10	Improve reliability by constructing new station with high level / double edge platform. Improve train operations and reduce dwell time.	No
Niagara Subdivision Double Track (CP 17 to CP 22) (MPs QDN17 to QDN23.8)	EW-17	Improve capacity by adding a second track.	Yes
Niagara Falls Maintenance Facility / Yard Improvements (MP QDN27)	EW-18	Improve reliability by adding storage tracks and a maintenance building to provide shore power, potable water, inspection, cleaning and light repair capabilities. Decreases time to prepare for AM departures and eliminates delays from frozen equipment. Increases layover capacity.	Yes
Niagara Falls Track Improvements (MPs QDN25 to QDN28)	EIS-12	Improve capacity and reliability by upgrading an existing track	Yes

ES = Empire Corridor South; EW = Empire Corridor West; SRP = State Rail Plan; EIS – Tier 1 Environmental Impact Statement

Service Enhancements

The Alternative 125 corridor includes two intermediate stops between Albany-Rensselaer and Buffalo at Syracuse and Rochester. Distances between stops would range from 135 miles between Albany/Rensselaer and Syracuse, to 70 miles between Syracuse and Rochester, and between Rochester and Buffalo.

Equipment

Alternative 125 would add 17 dual mode locomotive-powered trainsets to increase the frequency of passenger rail service. All Empire Corridor Alternatives require continued use of dual mode locomotives. Alternative 125 will use a different type of dual mode locomotive, similar to those recently introduced on the NJ TRANSIT and AMT (Montreal) commuter rail networks. Rather than 700 volts (DC) third rail power, Alternative 125 will use a diesel/AC overhead contact wire dual mode capability. The overhead wire is presently energized at 25 hertz (Hz) 11 kilovolts (kV) within the Penn Station/East River Tunnel area and assumed to be energized at the more modern standard of 60 Hz 25 kV in the proposed electrified segment of the alternative. As with the NJ TRANSIT operation, the Alternative 125 dual mode locomotives would be capable of operating with either of the AC frequency/voltage combinations.

Capital Costs

The estimated capital cost of Alternative 125 is \$15.74 billion.

Trip Time

With Alternative 125, the trip time between New York City and Niagara Falls, based on westbound scheduled times, would be 6 hours and 2 minutes (6:02). This would be 3 hours and 4 minutes (3:04) less than the Base Alternative's trip time.

On-Time Performance

In 2035, the OTP for Alternative 125 along the Empire Corridor West would be virtually 100 percent on the new Alternative 125 corridor and an 83 percent OTP on the existing (regional) corridor.

Ridership

Alternative 125 is projected to increase ridership to 4.3 million passengers in the year 2035. This would be almost 169 percent more than the projected ridership for the Base Alternative.

Revenue

Annual revenue to Alternative 125 is projected to be \$252 million.

Operations & Maintenance Costs

Operations and maintenance costs for Alternative 125 are estimated at approximately \$312 million per year.

Safety

As a sealed corridor with all grade-separated crossings, travel safety would be maximized with Alternative 125. The high-speed service will not encounter grade crossings, which will reduce the potential for conflicts between automobile traffic and high-speed passenger trains. Costs for fencing for portions of the corridor on both sides of the right-of-way have been incorporated, which will provide improved safety by preventing trespassing within the right-of-way. The increase in train ridership could translate to a decrease in highway traffic volume. With fewer cars on the road this would, in turn, naturally result in fewer traffic accidents and other safety gains. Although there would be additional train frequency, the frequency of accidents, injuries, and deaths involving trains, is much lower than the frequency of accidents on highways, therefore the overall number of accidents, injuries, and deaths would decrease due to the shift in travel from passenger cars to rail.

Passenger and freight trains are currently comingled on CSXT's right-of-way. CSXT has expressed concerns about comingling of passenger rail and freight on Empire Corridor. CSXT's comments, including concerns regarding safety, are responded to in Appendix K, Comments and Responses for Railroads. Alternative 125 would provide an exclusive right-of-way for express traffic; however, regional trains would still share trackage with CSXT freight trains.

The proposed track improvements would be designed to comply with American Railway Engineering and Maintenance-of-Way Association, Amtrak, and CSXT design criteria. Federal funding announced in 2017 for positive train control will improve safety for the route between Schenectady and Poughkeepsie, and Metro-North and the State of New York have advanced initiatives for PTC along the Hudson Line south of Poughkeepsie. Positive train control has also been implemented by CSXT west of Schenectady on the existing rail corridor. A System Safety Plan will be prepared for approval for FRA prior to the start of system operation, in compliance with federal guidelines.

Freight Operations

The freight operating characteristics for Alternative 125 are anticipated to be similar to that of the Base Alternative. Alternative 125 would include the Alternative 90A additional sections of track (with sections of third main track added in at least five locations and second track added in at least two locations). West of Albany-Rensselaer Station, new mainline passenger trains would operate on exclusive right-of-way for 243 miles, minimizing interference with freight operations. However, unlike Alternatives 90B and 110, Alternative 125 will not add additional third and fourth main tracks along Empire Corridor West, and will not reduce conflicts between freight traffic and regional Amtrak Empire Corridor service serving all passenger stations.

The simulation of rail operations and the analysis of the potential impact of the program on freight operations demonstrate that Alternative 125 will have a similar effect on freight movements as the Base Alternative (see Exhibit 6-8). The reason that service is comparable is that the regional legacy service of four daily round trips will continue to operate on the existing Empire Corridor, in addition to the express service. The Rail Network Operations Simulation (Appendix D) used information provided by CSXT for both current and future train movements.

4. Social, Economic, and Environmental Considerations

4.1. Introduction

This chapter describes existing social, economic, and environmental conditions in the study area and describes the potential for impacts of the Preferred Alternative (Alternative 90B) for the Empire Corridor Program. This chapter presents a comparison of the direct, long-term, and/or operational impacts of Alternative 90B with the other alternatives considered and dismissed (the Base Alternative,⁴⁹ Alternative 90A, and Alternatives 110 and 125). Further details on existing environmental conditions and the impact assessments for 90A, 110, and 125 (as presented in the Tier 1 Draft EIS) can be found in Appendix G. Indirect and cumulative impacts are addressed in Section 4.24 while construction and/or short-term impacts are addressed in Section 4.25.

The impacts assessment performed is largely a qualitative assessment based on the Tier 1 concepts developed. The Tier 1 EIS has been prepared in accordance with the National Environmental Policy Act of 1969 (NEPA) and its implementing regulations (40 Code of Federal Regulations [CFR] Parts 1500-1508); FRA's NEPA procedures (64 Federal Register [FR] 28545 and 78 FR Part 2713); and the New York State Environmental Quality Review Act (SEQR). NYSDOT, as the SEQR lead agency, has determined that the variance procedures under SEQR (17 NYCRR Part 15) apply. NYSDOT will further refine analysis in advancing assessments for the Preferred Alternative. (Although in this chapter NYSDOT uses the singular term "Tier 2 analysis," individual projects within the Empire Corridor Program will be further evaluated for compliance with NEPA/SEQR.) The "Future Analysis" section addresses Tier 2 analysis. Potential mitigation measures to be identified in Tier 2 are also addressed in this chapter. A map of the program corridor is shown in Exhibit 4-1.

This chapter characterizes the affected environment within study areas that have been identified for each alternative under consideration. The study areas for the High Speed Rail Empire Corridor Program Tier 1 Final EIS are defined as follows:

- The 90/110 Study Area used for analysis of Alternatives 90A, 90B, and 110 consists of the existing 464-mile long Empire Corridor and Niagara Branch.^{50,51}
- The 125 Study Area used for analysis of Alternative 125, which follows portions of the existing Empire Corridor and also bypasses the railroad along new alignment, is 450 miles long.⁵²

Specific study areas for the natural and physical environment, and cultural resources vary from 600 feet to a mile in width depending on the resource, and are centered about the existing or prospective

⁴⁹ The Tier 1 Draft EIS included eight improvements that were previously programmed as part of the Base Alternative. Since the publication of the Tier 1 Draft EIS, these individual projects have been completed. The discussion in this chapter presents the Base Alternative, as a basis of comparison with the other Build Alternatives. This discussion retains the original estimates of takings to form a basis of comparison with the Build Alternatives (e.g., number of historic impacts).

⁵⁰ The 90/110 Study Area (existing Empire Corridor) included an approximate 1-mile extension of the Niagara Branch, terminating at the Niagara Falls International Railway Station and Intermodal Transportation Center (Niagara Falls Station) that was completed in 2016 as part of the Base Alternative.

⁵¹ Mileposts for the existing Empire Corridor, as designated by the railroads, skip a mile where the Hudson Line, originating at Grand Central Station, merges with the Empire Corridor at the Manhattan-Bronx county line near Spuyten Duyvil Station.

⁵² Mileposts for the 125 Study Area, beginning at Albany-Rensselaer Station and proceeding west to Buffalo, are referenced with the designation QH preceding the number. Mileposts for the Niagara Branch are referenced with the designation QDN preceding the number.



Exhibit 4-1—Corridor Map of the Build Alternatives

rail line centerlines. Generally, specific study areas for the human environment, noise, and air quality are more expansive, and are defined by factors such as community sizes, geographical and political boundaries, and census boundaries.

4.2. Land Use

4.2.1. Regulatory Context

The Federal Railroad Administration's *Procedures for Considering Environmental Impacts* (Federal Register, Vol. 64, No. 101, May 26, 1999) requires consideration of potential environmental impacts on existing and future land use. The NYSDOT Project Development Manual also requires consideration of potential impacts on land use and local master plans and private development plans.

4.2.2. Methodology

Existing land uses were characterized for study areas within 300 feet of the corridor centerline for all alternatives. Land uses were identified using U.S. Geological Survey land use land cover

Geographic Information System (GIS) mapping. Land uses were characterized by county and for the nine major cities within the study area. Land uses surrounding the sixteen existing Amtrak station sites were also identified through review of Google aerial photography and mapping.

Future land use plans were accounted for using regional level consistency reviews of existing Long-Range Transportation Plans and Comprehensive Plans at the Metropolitan Planning Organization (MPO) or county level. This plan review included the major metropolitan areas along the study area. Major business districts are described in Section 4.3.3, “Business Districts.”

4.2.3. Existing Conditions

The 600-foot wide “land use” study area for Alternatives 90 and 110 consist of twenty counties and intersects 97 cities/towns and 45 villages. The 600-foot wide study area for Alternative 125 includes portions of twenty-one counties, 92 cities/towns, and 24 villages. There are eight major metropolitan areas that are within the catchment area of nine MPOs, as described in Section 2.2. The land uses in the study area are described below from south to north (New York City to Rensselaer County) and east to west (Albany County to Buffalo/Niagara Falls) and are shown in Exhibit G-1 of Appendix G.1, Land Cover Maps (Sheets 1 through 3). Appendix G.1 presents a detailed overview of the land uses in each county, which are summarized in Exhibit 4-2 and Exhibit 4-3, as well as the major cities and station sites.

Empire Corridor South

The Empire Corridor South segment, from New York City to Rensselaer, extends 142 miles and in many locations closely follows the east bank of the Hudson River. The most urbanized segment of the study area extends roughly 10 miles through New York City from Pennsylvania Station (southern terminus of the Empire Corridor) in Manhattan to the northern border of the City of Yonkers in **Westchester County**, as shown in the land use totals in Exhibit 4-2. In New York City, the county boundaries coincide with the boroughs. The study area extends through **Manhattan (New York Borough)** and the **Bronx (Bronx Borough)**.

The Hudson Valley Region north from New York City includes **Westchester, Putnam, Dutchess, and Columbia Counties**, which extend along the east side of the Hudson River and become less urbanized to the north, as shown in Exhibit 4-2. The Capital District includes **Rensselaer County** on the northern end of this program segment. The predominance of surface waters, wetlands, and undeveloped forest area in many locations where the river bank is undeveloped or consists of parkland reflects the location of the rail line in close proximity to the river’s edge in many locations.

Empire Corridor West/Niagara Branch: 90/110 Study Area

The 322-mile-long Empire Corridor West/Niagara Branch, with the exception of the metropolitan areas within and surrounding the major cities, has a rural agricultural character, as shown in the land use totals in Exhibit 4-2. This route extends through the Capital District (**Albany and Schenectady Counties**); the rural **counties of Montgomery, Herkimer, Oneida**; the Central New York Region (the **counties of Madison, Cayuga, and Onondaga**); the Finger Lakes Region (**Onondaga, Cayuga, Wayne, and Monroe Counties**), and the Buffalo-Niagara Region (**Erie and Niagara Counties**). As shown in Exhibit 4-2, the urbanized areas center around the cities of Albany (Albany County), Schenectady (Schenectady County), Utica (Oneida County), Syracuse (Onondaga County), Rochester (Monroe County), Buffalo (Erie County), and Niagara Falls (Niagara County).

Empire Corridor West/Niagara Branch: 125 Study Area

The 125 Study Area, extending 308 miles from the Rensselaer County line to Niagara Falls, takes a more direct route than Empire Corridor West through rural and agricultural areas between Rensselaer County and Buffalo. The 125 Study Area bypasses several of the major metropolitan areas and existing stations along the Empire Corridor West, with the exception of two 16-mile sections roughly centered on the Syracuse and Rochester metropolitan areas. The more rural nature of the corridor, particularly in the agricultural land cover type, is evident in the land use totals shown in Exhibit 4-3.

Exhibit 4-2—Land Use/Land Cover in the 90/110 Study Area (in acres)

County	Residential	Commercial Services	Industrial	Transportation/ Utilities	Industrial and Commercial	Mixed Urban Land	Agricultural	Rangeland	Forest Land	Surface Water	Wetlands	Barren Land	Totals
New York	19	91	14	135	0	453	0	0	0	4	0	0	716
Bronx	33	14	0	3	0	43	0	0	0	97	0	0	190
Westchester	369	118	344	180	0	231	0	0	225	821	0	0	2,288
Putnam	6	5	0	0	0	0	0	0	216	417	34	0	678
Dutchess	125	32	137	60	42	101	125	0	1,252	1,290	107	44	3,315
Columbia	346	55	0	0	0	0	417	0	1,067	104	31	125	2,145
Rensselaer	196	39	33	29	0	0	276	0	346	51	0	0	970
Albany	52	72	219	83	33	24	2	0	327	12	0	31	855
Schenectady	333	46	80	86	0	39	147	0	311	11	0	12	1,065
Schoharie	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Montgomery	288	225	0	179	0	112	962	174	852	44	0	97	2,933
Herkimer	63	316	0	33	0	26	584	143	530	126	0	17	1,838
Oneida	135	149	46	204	0	0	832	221	171	0	323	0	2,081
Madison	32	42	0	0	0	11	263	110	504	0	21	26	1,009
Onondaga	63	156	333	299	0	292	343	0	569	18	164	38	2,275
Cayuga	0	0	0	23	0	0	641	0	106	9	54	0	833
Wayne	9	54	36	0	0	4	1,638	0	658	0	284	16	2,699
Monroe	226	342	257	145	20	159	833	0	142	0	92	33	2,249
Genesee	113	18	29	5	0	34	1,818	0	78	15	65	1	2,176
Erie	424	317	550	136	0	90	630	0	146	0	28	22	2,343
Niagara	126	70	29	117	95	92	479	0	0	0	0	41	1,049
Totals	2,958	2,161	2,107	1,717	190	1,711	9,990	648	7,500	3,019	1,203	503	33,707

Source: The United States Geological Survey (USGS) National Mapping Program.

Exhibit 4-3—Land Use/Land Cover in the 125 Study Area (in acres)

County	Residential	Commercial Services	Industrial	Transportation/ Utilities	Industrial and Commercial	Mixed Urban Land	Agricultural	Rangeland	Forest Land	Surface Water	Wetlands	Barren Land	Totals
New York	19	91	14	135	0	453	0	0	0	4	0	0	716
Bronx	33	14	0	3	0	43	0	0	0	97	0	0	190
Westchester	369	118	344	180	0	231	0	0	225	821	0	0	2,288
Putnam	6	5	0	0	0	0	0	0	216	417	34	0	678
Dutchess	125	32	137	60	42	101	125	0	1,252	1,290	107	44	3,315
Columbia	346	55	0	0	0	0	417	0	1,067	104	31	125	2,145
Rensselaer	179	22	17	29	0	0	276	0	346	47	0	0	916
Albany	99	20	37	675	0	0	19	0	123	12	0	34	1,019
Schenectady	83	47	0	127	0	18	632	8	332	0	0	0	1,247
Schoharie	0	0	0	0	0	53	214	0	188	0	0	0	455
Montgomery	0	0	0	0	0	0	1,094	0	383	0	68	0	1,545
Herkimer	27	0	0	0	0	31	788	32	969	0	0	0	1,847
Oneida	67	5	0	6	0	27	923	0	501	0	75	0	1,604
Madison	25	15	0	0	0	25	684	53	244	0	0	16	1,062
Onondaga	54	156	354	306	0	306	811	0	787	22	252	37	3,085
Cayuga	0	0	0	23	0	1	1,177	0	300	15	121	0	1,637
Wayne	28	54	36	0	0	37	3,501	0	1,206	0	400	16	5,278
Monroe	368	342	266	147	21	179	1,409	0	342	0	92	33	3,199
Genesee	113	18	29	5	0	34	3,640	0	201	15	251	32	4,338
Erie	459	324	550	142	0	104	1,165	0	283	24	65	71	3,187
Niagara	125	70	29	117	95	92	479	0	0	0	0	41	1,048
Totals	2,525	1,388	1,813	1,955	158	1,735	17,354	93	8,965	2,868	1,496	449	40,799

Source: The United States Geological Survey (USGS) National Mapping Program.

Consistency with the New York State Smart Growth Public Infrastructure Policy Act

An evaluation of the program's consistency with the New York State Smart Growth Public Infrastructure Policy Act (Environmental Conservation Law, Article 6) determined that the program meets the Smart Growth criteria specified in the Act. The program's consistency with the ten criteria are summarized below:

- **Use, maintenance, or improvement of existing infrastructure:** Consistent—the Preferred Alternative utilizes and follows the existing Empire Corridor rail corridor.
- **Location in municipal centers:** Consistent—the program extends through the state's largest metropolitan areas: New York City, Buffalo, Rochester, Yonkers, Syracuse, and Albany
- **Infill Development:** Consistent—review of regional and local master plans for communities along the corridor finds support for HSR and concentration of development along the rail corridor.

- **Protection of State’s Resources:** Consistent—the program will result in a net positive impact on greenhouse gas emissions, the net annual operational benefits for the Preferred Alternative would be roughly equivalent to eliminating the emissions associated with the energy and electricity consumption of 2,500 to 4,200 average U.S. single family homes every year.
- **Smart Growth planning:** Consistent—the program facilitates access to existing stations collocated with downtown redevelopment opportunities in the state’s largest cities.
- **Mobility and transportation choices:** Consistent—the program’s purpose is to improve rail service, including on-time performance, reduced travel times, increased frequency of service, and attracting additional ridership, providing an alternative to use of highways and automobiles.
- **Inter-governmental coordination:** Consistent—FRA and NYSDOT invited 34 agencies to participate in program scoping and as NEPA cooperating and/or participating agencies to provide input into the program. NYSDOT also formed the Empire Project Advisory Committee with representatives from key agencies, metropolitan planning organizations, and stakeholders to guide decision-making during the environmental review process.
- **Community-based planning:** Consistent—NYSDOT developed and implemented a multi-faceted Public Involvement Plan to engage and inform the public, key stakeholders, and government agencies at key milestones throughout the planning process.
- **Predictability and reliability in building and zoning codes:** Not applicable.
- **Sustainability Development:** Consistent—the program will strengthen communities by providing commuting and travel options and improve environmental quality by facilitating rail use and reducing reliance on automobile travel.

The program’s consistency with the New York State Smart Growth Public Infrastructure Policy Act is addressed in detail in Exhibit G-2 in Appendix G.1. Under the state’s Smart Growth Act, the state infrastructure agencies may not approve, undertake, support or provide financial assistance to a public project unless the project is consistent with the Smart Growth criteria.

Consistency with Regional/Local Plans

A review of existing comprehensive plans and long-range transportation plans prepared by state, county and local governmental agencies demonstrated their consistency with the proposed high-speed rail improvements program planned for the Empire Corridor. Many of these plans indicate support for improved use and access to rail service including the introduction of high-speed rail, improvements to the rail corridor, and revitalizing station areas and fostering transportation-friendly land uses. In some cases, these plans advocate the relocation of existing rail facilities to a more accessible location.

Other common rail transportation objectives cited in the plans that support the development of high-speed rail include the following:

- Strengthen alternative modes of transportation,
- Improve intercity passenger rail service,
- Improve on-time performance for intercity passenger rail service,
- Expand ridership for intercity passenger rail service,
- Improve multi-modal transportation connections, and
- Foster economic development.

Exhibit G-3 in Appendix G.1 identifies those state, Metropolitan Planning Organization (MPO), county

and city plans reviewed and addresses the extent to which they reference transit improvements and the introduction of high-speed rail.

The program is consistent with the 2009 New York State Rail Plan and the New York Senate High Speed Rail Task Force Action Program, as well as the state's Multimodal Transportation Program Submission 2009-2014. These rail multimodal plans all endorse and program improvements for improved intercity passenger rail and high-speed rail improvements in the Empire Corridor. Although many, but not all of the plans, specifically reference support for high-speed rail or Empire Corridor improvements, the MPO, county, and city plans reviewed overwhelmingly support improvements in intercity passenger rail service, and generally endorse improvements in transit and/or station access.

4.2.4. Environmental Consequences

Comparison of Alternatives

This section describes potential land use impacts of the alternatives, based on review of aerial photography and GIS land use mapping. Potential short-term impacts during construction are addressed in Section 4.25.3. Review of aerial mapping and plans indicates that the Base Alternative and Alternative 90A would have no direct impacts to properties outside of the right-of-way. These alternatives would largely involve work within the right-of-way, with tracks being added in the location of the former track beds or existing access roads.

Alternative 90B, the Preferred Alternative, would involve greater property impacts in discrete areas than the Base Alternative and Alternative 90A, with addition of third track and limited areas of fourth track. The proposed work for the Preferred Alternative will include the addition of track, as well as maintenance service roads in selected areas. The Preferred Alternative would involve property takings affecting land uses in approximately 9 areas in 6 counties. In most of these locations, the areas affected are rural lands or industrial properties. The only potential neighborhood impact may occur as a result of a highway realignment, if needed, at one location.

Alternative 110 would have discrete areas of impacts to properties in more locations than Alternative 90B, with construction of third and fourth tracks extending further outside of the right-of-way in more locations. The third tracks would be offset 30 feet from the existing tracks, and 20 additional miles of fourth track would be added. Alternative 110 would directly affect approximately 53 areas in 8 counties – mostly along the Empire Corridor West and Niagara Branch. These anticipated effects are described in detail in Appendix G.1.

Alternative 125 would involve the greatest property impacts to existing land use as it extends 236 miles as a sealed corridor on new alignment through primarily rural areas. Alternative 125 would involve construction of a total of 236 miles of track on new alignment from roughly Albany-Rensselaer to Buffalo. Alternative 125 would include new right-of-way in most areas, but would merge back with the Empire Corridor over two 15- and 16-mile segments centered on Syracuse and Rochester, respectively. Alternative 125 would require acquisition of two to three thousand acres of land for creation of a sealed corridor between Albany and Buffalo. Appendix G.1 provides a detailed description of the affected land uses.

Exhibit 4-2 and Exhibit 4-3 provide acreages of types of affected land use within the 90/110 and 125 study areas, and Appendix G.1 provides detailed descriptions of impacts associated with the Base Alternative and Alternatives 90A, 110, and 125. The design and advancement of the Preferred

Alternative will involve efforts to avoid property encroachments as design is advanced as part of Tier 2 assessments.

Long-term indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable (e.g., growth inducing effects related to changes in the pattern of land use, and population density or growth rate). Of the alternatives evaluated, the Base and 90A Alternatives would involve the least long-term indirect, growth-inducing impacts. Alternatives 110 and 125 would involve the greatest indirect impacts, with larger transportation benefits, and a greater degree of secondary development impacts. The Preferred Alternative would involve growth-inducing indirect impacts that would be greater than the Base and 90A Alternatives but would be more moderate than Alternatives 110 and 125.

Alternative 90B (Preferred Alternative)

This land use assessment identified potential for land use impacts that can occur as a result of long-term acquisitions or encroachments. Although the extent of these impacts cannot be quantified at this time, this assessment identified land uses proximal to the proposed Tier 1 conceptual corridor.

Empire Corridor South

The impacts of the Preferred Alternative include Alternative 90A projects. As with Alternative 90A and the Base Alternative, work would occur largely within the right-of-way along the Empire Corridor South; this corresponds to a similar finding anticipating no direct land impacts for this segment.

Empire Corridor West/Niagara Branch

Alternative 90B would directly affect properties in nine areas in six counties along the Empire Corridor West/Niagara Branch.

- The proposed third track and maintenance service road at the connection to the Selkirk Branch at MP 168.3 in **Schenectady County** may impact the edges of agricultural/industrial property adjacent to Route 5. The proposed improvements may pass through the wooded edges of this area, although no impacts to buildings are anticipated.
- Just west of Amsterdam Station in **Montgomery County**, the third track and maintenance access road may impact wooded property that houses utility structures between the Mohawk River and Route 5 at approximate MP 177.7. No buildings or aboveground structures will be impacted with Alternative 90B at this location. Continuing west, just beyond this area at approximate MP 177.8, the third track and maintenance access road would encroach upon Route 5 where the land between the Mohawk River and Route 5 narrows, potentially impacting the roadway alignment. This realignment may impact an adjoining street to the north in a residential neighborhood. At MP 192.3, the maintenance access road and track may extend into the wooded edge of a residential property and to the west would cross and realign Route 5 where the railroad and road are near the river, affecting wooded property. Near MP 200.7, the new maintenance access road and new passenger track and associated right-of-way may be close enough to affect industrial buildings.
- In **Herkimer County**, the maintenance service road adjacent to the new third and fourth tracks may impact a farm building at approximate MP 210.8 on land closely adjoining both the railroad and Route 5 to the north.

- In **Wayne County**, the addition of a maintenance surface road may impact an industrial building structure at approximate MP 341.1, west of Route 88, where a new track siding is proposed.
- Just west of Interstate 390 in **Monroe County**, at approximate MP 374.7, the proposed third track and maintenance access road extends beyond the right-of-way and may impact industrial property to the north.
- In **Erie County**, the addition of a fourth track to the south of the existing track at Buffalo-Depew Station (MPs 431 to 432) will impact the existing station building as well as additional industrial land west of the station to where the proposed third track meets the proposed No. 20 turnout.
- The double tracking along 10 miles of the Niagara Branch (between QDN MPs 2 to 7 and QDN 17 to 22.8) and upgrades to 3 miles (QDN 25 to 28) is anticipated to be performed within the right-of-way and is not expected to result in land use impacts.

The first four areas of potential impact described above are primarily rural/agricultural in nature, while work in Monroe County (industrialized areas along I-390 and Route 33) and Erie County (at Buffalo-Depew Station) is proximal to urban downtown areas.

4.2.5. Potential Mitigation Strategies

During the Tier 2 process, refinements in design will include efforts to avoid and minimize impacts on adjoining buildings and properties of the Preferred Alternative, Alternative 90B. If it is not possible to avoid property impacts, mitigation measures will include providing relocation assistance and compensation, as appropriate, to affected property owners, in conformance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (42 U.S.C. 4601 et seq.). This law requires that fair and equitable assistance be provided to those persons displaced by federal or federally funded actions.

Other potential mitigation measures include considering regional and local plans for transit connections and site development and consulting with regional and local officials in the siting and design of passenger facilities and amenities. Mitigation measures for temporary land use impacts during construction could involve compensation to the property owners and restoring affected parcels, as appropriate. Construction mitigation is addressed in Section 4.25.

4.2.6. Future Analysis

During the Tier 2 process, the NYSDOT will refine property and right-of-way mapping, and the extent of property acquisitions and building impacts will be defined. NYSDOT will make efforts to refine the design to avoid property takings and impacts on neighborhoods, businesses, parks and recreation areas, community facilities, residences, and other environmentally sensitive land uses to the extent practicable. Additional research will be performed regarding planned development in the vicinity of the station sites. Consistency with local plans and zoning will be addressed, and effects on land use patterns will be assessed as part of the Tier 2 evaluations. The effects on businesses and neighborhoods/community cohesion are addressed above in the preceding sections as part of the Tier 1 assessment. Job creation is addressed in Section 4.3.4 (Regional Population, Employment, and Business Districts), and secondary development and cumulative impacts are addressed in Section 4.24 (Indirect and Cumulative Impacts). When designs are further advanced in Tier 2 assessments, these impacts will be reevaluated in more detail.

4.3. Regional Population and Employment, and Business Districts

4.3.1. Regulatory Context

The Federal Railroad Administration's *Procedures for Considering Environmental Impacts* (Federal Register, Vol. 64, No. 101, May 26, 1999) requires consideration of both beneficial and adverse impacts of program alternatives on the socioeconomic environment, including demographic shifts and impacts on commerce, metropolitan areas, and business districts. The NYSDOT Project Development Manual also requires consideration of potential impacts on neighborhoods and communities, regional and local economies, and business districts in the evaluation of program alternatives.

4.3.2. Methodology

The Tier 1 socioeconomic analysis examined population and employment trends for twenty-five counties that transect or adjoin the program corridor, comparing existing conditions to future (2035) projections. Although the ridership and market assessments for transportation analysis focused on the major metropolitan market areas, the study area for environmental assessments was based on county level data. The MPOs and MSAs define a broader area extending outside counties (and even states) immediately adjoining the existing rail lines, and not all counties along the tracks are within the nine MPOs/eight MSAs.

The 2010, 2019, and projected 2035 population were compared to identify changes in demographics along the corridor. Existing county population statistics came from the 2010 U.S. Census Bureau Decennial Census and the 2019 U.S. Census Annual Population Estimates Program. Future county population projections obtained from Woods & Poole Economics, Inc.⁵³ provided uniform county-level projections over the statewide study area that traverses multiple regional planning areas. These projected figures do not consider any changes in public policy and infrastructure investments, such as the High-Speed Rail Empire Corridor, which could potentially change the population and employment outlook particularly for the western corridor. Existing population data was also compiled for the years 2010 and 2019, using U.S. Census data for the nine major cities along the corridor, including New York City, Yonkers, Poughkeepsie, Albany, Schenectady, Utica, Syracuse, Rochester, and Buffalo. These cities form the core for seven of the eight metropolitan regions or MSAs within the study area (see Section 2.2, "Major Markets Served by the Empire Corridor"). Historical growth of these cities was also gauged by using 2006 U.S. Census data obtained from the Population Estimates Program.

This analysis also considered labor statistics including county employment trends, unemployment (2010 and 2019) and local business activity within the study corridor. The U.S. Department of Commerce, Bureau of Economic Analysis (BEA) supplied existing employment data (2010 and 2019) for each county, as these represent a complete measure of part-time and full-time employment. This analysis compared the BEA existing employment figures to the Woods & Poole Economics, Inc. future 2035 employment forecasts. Employment data obtained from these sources account for wage and salary workers, proprietors or business owners (farm and non-farm), private household employees, and miscellaneous workers. The U.S. Bureau of Labor, Local Area Unemployment Statistics supplied unemployment statistics for 2010 and 2019. The socioeconomic profile identifies key labor market

⁵³ Woods & Poole Economics, Inc. is an independent firm that specializes in long-term county economic and demographic projections, based on comprehensive historical county database and the integrated nature of the projection model.

areas that may become more accessible as a result of the program.

The analysis provides a discussion of the potential effects of the program alternatives on the socioeconomic environment within the more populated and urban areas as noted. The assessment is qualitative in nature and focuses on general socioeconomic effects that could occur along the corridor. Future Tier 2 analyses would include a more detailed examination of potential impacts of the Preferred Alternative, including a detailed evaluation of means to avoid or minimize impacts through design and mitigation strategies to offset remaining unavoidable impacts.

4.3.3. Existing Conditions

Population

Overview

This section describes the socioeconomic conditions and trends at the county and city levels for the years 2010, 2019, and 2035. The study area covers twenty-five counties with a total population of 9,016,633 as of 2019, an increase of 65,108 (or 0.7%) from 2010 (refer to Exhibit 4-4). The study area comprises approximately 46 percent of New York's 2019 estimated population. As discussed in Section 2.2, "Major Markets Served by the Empire Corridor," estimated ridership for the program would extend over a wider region that includes entire metropolitan areas (served by the Metropolitan Planning Organizations). Projections indicate that the study corridor will realize a 7.2 percent gain in population from 2019 to 2035 or an increase of 651,782 persons.

The eleven most populous counties along the 142-miles of the Empire Corridor South from Manhattan (New York County) to Rensselaer County contain 62 percent of the 90/110 and 125 study area population for 2019. The fourteen counties in the less populated areas along the Empire Corridor West/Niagara Branch extending 322 miles from Albany County west to Niagara Falls (Niagara County) comprise 38 percent of the 2019 study area population. Empire Corridor South has over one and half times the population in an area roughly half the size as Empire Corridor West/Niagara Branch. Appendix G.2 presents a detailed county by county description of population statistics.

Empire Corridor South

The counties of **New York, Bronx, Westchester, Rockland, Putnam, Orange, Dutchess, Ulster, Columbia, Greene, and Rensselaer**, comprise the more urbanized and populous segment of the Empire Corridor. These counties had a 2010 population of 5,456,031 persons that grew by 104,591 persons (or 1.9%) by 2019, and comprised almost 2/3 of the study area population. Projections indicate that the total population will grow by 674,731 persons or 12.1 percent by the year 2035. Exhibit 4-4 compares the 2010, 2019, and 2035 populations by county for the entire Empire Corridor.

Empire Corridor West/Niagara Branch

The population in the fourteen counties (**Albany, Schenectady, Schoharie, Montgomery, Herkimer, Oneida, Madison, Onondaga, Cayuga, Wayne, Monroe, Genesee, Erie and Niagara**) along Empire Corridor West/Niagara Branch totaled 3,495,494 persons in 2010 and decreased by 39,483 (or 1.1%) by 2019. In contrast to the counties to the south, the forecast is for these counties to experience a loss in population, totaling 22,949 persons (or -0.7%) by 2035. This decline follows historic population losses precipitated by the decline of the region's core manufacturing and industrial base.

Major Cities

As discussed in the previous section, the principal cities located along the Empire Corridor include New York City, Yonkers, Poughkeepsie, Albany, Schenectady, Utica, Syracuse, Rochester, and Buffalo. Each of these urban centers had a 2010 population over 50,000, with the exception of Poughkeepsie (32,736), as noted in Exhibit 4-5 below. In 2019, each of these urban centers had a population over 60,000, with the exception of Poughkeepsie (30,515). The City of Poughkeepsie, listed below, also serves as the geographic and, to a large degree, transportation and institutional center of the Hudson Valley Region. New York City and Yonkers experienced an increase in population between 2010 and 2019. The Business District discussion contains additional descriptions of the major cities.

Exhibit 4-4—2010, 2019, and 2035 Population for Counties in the Study Area

County	2010 Population	2019 Population	2035 Population	2019-2035 Change	
				Change in No. of Persons	% Change
New York	1,585,873	1,628,706	1,700,678	71,972	4.4%
Bronx	1,385,108	1,418,207	1,610,926	192,719	13.6%
Westchester	949,113	967,506	1,052,815	85,309	8.8%
Rockland	311,687	325,789	359,957	34,168	10.5%
Putnam	99,710	98,320	141,646	43,326	44.1%
Orange	372,813	384,940	512,458	127,518	33.1%
Dutchess	297,488	294,218	358,964	64,746	22.0%
Ulster	182,493	177,573	218,775	41,202	23.2%
Columbia	63,096	59,461	67,724	8,263	13.9%
Greene	49,221	47,188	53,027	5,839	12.4%
Rensselaer	159,429	158,714	158,383	-331	-0.2%
Empire Corridor South (Total)	5,456,031	5,560,622	6,235,353	674,731	12.1%
Albany	304,204	305,506	288,503	-17,003	-5.6%
Schenectady	154,727	155,299	149,352	-5,947	-3.8%
Schoharie	32,749	30,999	34,793	3,794	12.2%
Montgomery	50,219	49,221	46,379	-2,842	-5.8%
Herkimer	64,519	61,319	61,942	623	1.0%
Oneida	234,878	228,671	222,788	-5,883	-2.6%
Madison	73,442	70,941	72,721	1,780	2.5%
Onondaga	467,026	460,528	450,453	-10,075	-2.2%
Cayuga	80,026	76,576	81,368	4,792	6.3%
Wayne	93,772	89,918	97,899	7,981	8.9%
Monroe	744,344	741,770	740,760	-1,010	-0.1%
Genesee	60,079	57,280	57,516	236	0.4%
Erie	919,040	918,702	912,661	-6,041	-0.7%
Niagara	216,469	209,281	215,927	6,646	3.2%
Empire Corridor West / Niagara (Total)	3,495,494	3,456,011	3,433,062	-22,949	-0.7%
ENTIRE CORRIDOR TOTAL	8,951,525	9,016,633	9,668,415	651,782	7.2%

Source: 2010 and 2019 population data obtained from the U.S. Census Bureau Decennial Census
2035 population projections prepared by Woods and Poole Economics, Inc.

Exhibit 4-5—Population of Major Cities in the Study Area

City	2006 Population	2010 Population	2019 Population	2010 to 2019 Change	
				No. of Persons	Percentage
New York City	8,214,426	8,175,133	8,336,817	161,684	2.0%
Yonkers, Westchester County	197,852	195,976	200,370	4,394	2.2%
Poughkeepsie, Dutchess County	30,050	32,736	30,515	2,221	-6.8%
Albany, Albany County	93,963	97,856	96,460	-1,396	-1.4%
Schenectady, Schenectady County	61,560	66,135	65,273	-862	-1.3%
Utica, Oneida County	59,082	62,235	59,750	-2,485	-4.0%
Syracuse, Onondaga County	140,658	145,170	142,327	-2,843	-2.0%
Rochester, Monroe County	208,123	210,565	205,695	-4,870	-2.3%
Buffalo, Erie County	276,059	261,310	255,284	-6,026	-2.3%

Source: US Census Bureau, Population Estimates Program

Employment***Overview***

The study area comprised 57 percent of the total state employment of 12,873,579 in 2019, the third largest state labor market in the country. Employment in the twenty-five study area counties totaled 6,372,282 in 2010 and grew by 949,344 jobs (or 14.9%) by 2019. Both in 2010 and 2019, the majority of jobs were located in the eleven counties along Empire Corridor South, which accounted for most (70%) of the study area employment. The fourteen counties along Empire Corridor West/Niagara Branch provided approximately 30 percent of study area employment. Appendix G.3 describes employment and forecasted trends by county for the study area. Exhibit 4-6 shows historic (2010), existing (2019) and future (2035) employment as well as 2019 annual average unemployment rates for each county. Between 2010 and 2019, annual average unemployment rates dropped in all study area counties by 3 to 4 percentage points reflecting strong employment in the region.

Empire Corridor South

The eleven counties along Empire Corridor South provided 4,307,858 jobs in 2010. This labor market is projected to increase by 19.2 percent by 2035, with a projected increase of 825,889 jobs.

The two study area counties within New York City, **New York (Manhattan Borough) and Bronx Counties** accounted for half (50.3% in 2019) of study area employment, and this does not account for employment within the remaining three counties within New York City. This labor market experienced the largest growth from 2010 to 2019, increasing by 579,512 jobs (22.2%) in Manhattan and by 91,156 (23.0%) jobs in Bronx County. In 2019, average annual unemployment stood at 2.8 percent in Manhattan, and 4.4 percent in Bronx County.

Westchester County was the second largest labor market, outside of Manhattan, comprising 572,419 jobs in 2010 and grew by 69,848 jobs (or 12.2%) in 2019. This job base is projected to expand by 10.6 percent by 2035 (67,785 jobs). In 2019, the average annual unemployment rate in Westchester County stood at 3.8 percent.

The remaining five counties close to New York City (Rockland, Putnam, Orange, Dutchess and Ulster)

similarly provided a significant job base, with the smallest number of jobs provided in **Putnam County** (39,168 jobs in 2010, increasing by 3,337 jobs, or 8.5%, by 2019). These five counties accounted for 602,421 in 2010 or 9.5 percent of study area employment. The job base for these counties grew by 74,120 jobs or 12.3 percent by 2019. The projection is for the job base to expand by an additional 15.5 percent (an increase of 104,856 jobs) by 2035. These five counties had an average annual unemployment rate of 3.7 percent in 2019.

Empire Corridor West/Niagara Branch

The fourteen counties along Empire Corridor West/Niagara Branch accounted for 2,064,424 jobs in 2010 and grew by 125,969 jobs (or 6.1%) by 2016. This labor market is forecasted to expand by 15.4 percent by 2035, with a projected increase of 337,272 jobs.

Exhibit 4-6—2010, 2019 and 2035 Employment and 2016 Unemployment Rates for Study Area Counties

County	2010 Employment	2019 Employment	2035 Employment	2019-2035 Change		2019 Annual Average Unemployment Rate
				No. of Jobs	Percentage	
New York	2,615,450	3,194,962	3,011,516	-183,446	-5.7%	2.8%
Bronx	397,413	488,569	465,307	-23,262	-4.8%	4.4%
Westchester	572,419	642,267	710,052	67,785	10.6%	3.8%
Rockland	152,836	181,419	188,895	7,476	4.1%	3.5%
Putnam	39,168	42,505	49,249	6,744	15.9%	3.8%
Orange	175,491	202,366	237,400	35,034	17.3%	3.9%
Dutchess	148,391	157,724	192,940	35,216	22.3%	3.6%
Ulster	86,535	92,527	112,913	20,386	22.0%	3.7%
Columbia	29,464	33,453	41,869	8,416	25.2%	3.2%
Greene	20,877	21,477	27,268	5,791	27.0%	4.7%
Rensselaer	69,814	73,964	96,338	22,374	30.3%	3.7%
Albany	258,939	282,482	330,785	48,303	17.1%	3.5%
Schenectady	80,665	80,756	84,890	4,134	5.1%	3.8%
Schoharie	12,668	13,120	16,643	3,523	26.9%	4.8%
Montgomery	24,883	24,782	29,158	4,376	17.7%	5.4%
Herkimer	23,300	23,858	27,669	3,811	16.0%	5.4%
Oneida	133,696	133,794	188,186	54,392	40.7%	4.5%
Madison	30,342	31,206	37,879	6,673	21.4%	4.9%
Onondaga	299,205	315,100	362,124	47,024	14.9%	4.0%
Cayuga	34,471	34,562	42,302	7,740	22.4%	4.7%
Wayne	39,004	38,406	42,897	4,491	11.7%	4.7%
Monroe	463,325	499,626	596,481	96,855	19.4%	4.3%
Genesee	29,482	29,996	35,210	5,214	17.4%	4.4%
Erie	546,166	588,739	634,748	46,009	7.8%	4.5%
Niagara	88,278	93,966	98,693	4,727	5.0%	5.6%
Total	6,372,282	7,321,626	7,661,412	339,786	4.6%	4.2%

Source: U.S. Department of Commerce, Bureau of Economic Analysis (2010 and 2019), Woods and Poole Economics, Inc. (2035 projections), Annual 2019 Unemployment rates: Bureau of Labor Statistics, "Labor Force Data by County."

Erie County had the largest employment base in 2019, with 588,739 jobs, followed by **Monroe County** (499,626 jobs), **Onondaga County** (315,100 jobs), **Albany County** (282,482 jobs), **Oneida County** (133,794 jobs) and **Niagara County** (93,966 jobs). Together, these six counties accounted for approximately 26 percent of the study area employment in 2019, and are forecasted to grow by 15.5 percent (or 297,310 jobs) by 2035. The 2019 unemployment rates were highest in the western counties. Niagara County had the highest unemployment rate in 2016 (5.6%), and the remaining counties had unemployment rates that ranged from 3.5 percent (Albany County) and 5.4 percent (Montgomery and Herkimer Counties) in 2019.

Business Districts

The eight major business districts along the study directly abut the Empire Corridor for the 90/110 Study Area, and all but Schenectady and Utica are located directly along the 125 Study Area. However, under Alternative 125, the existing Amtrak service provided to all of these cities would remain the same.

New York City

New York City is the financial capital of the country, and along with London and Tokyo regarded as a global financial center. Midtown Manhattan is the largest central business district in the U.S., and Lower Manhattan is the third largest. If the two study area counties, New York County (Manhattan) and Bronx County, were cities, they would each rank among the top 10 cities nationwide in terms of population.

New York City is the center of one of the most populous metropolitan areas in the world. New York City is the center of the New York-Northern New Jersey-Long Island, New York-New Jersey-Pennsylvania Metropolitan Statistical Area (MSA), which had a population that grew by 893,180 persons from 2010 (or 4.9%) to a total of 19,216,182 persons in 2019. In 2019, the gross metropolitan product of the New York metropolitan area (New York-Newark-Jersey City, New York-New Jersey-Pennsylvania MSA) was 1.861 trillion dollars, larger than the combined gross domestic product of Pennsylvania and New Jersey, and larger than all but one state (California)⁵⁴. This GDP grew by 39.1 percent from 2010. Based on commuting patterns, a wider region is defined by the U.S. Census Bureau as the New York-Newark-Bridgeport, New York-New Jersey-Connecticut-Pennsylvania Combined Statistical Area. One of every fifteen Americans lives within this wider region.

New York City's labor market totaled 6,193,192 in 2019, comprising 48.1 percent of New York State's employment. This labor market grew by 1,347,579 jobs from 2010, an increase of 28 percent. The city is critical to the state's economic vitality and is a driver of the national economy.

Yonkers

Yonkers is part of the New York City metropolitan area and is the fourth largest city in the state. It is the largest city in Westchester County and is situated within 12 miles of midtown Manhattan. The Yonkers central business district serves a largely local population with major retail activity and anchors, similar to the retail mall complexes in nearby White Plains. The downtown waterfront has historically played an important role in the city's economy, and the city is embarking on an ambitious,

⁵⁴ Global Insight, *U.S. Metro Economies: GMP—The Engines of America's Growth, Gross Metropolitan Product with Housing Update*. Prepared for the U.S. Conference of Mayors and the Council for the New American City, June 2008; Updated using U.S. Bureau of Economic Analysis, "Gross Domestic Product by State/Metropolitan Area." 2019.

mixed-use waterfront revitalization program.

Poughkeepsie

The City of Poughkeepsie is the seat of Dutchess County, and along with the Town of Poughkeepsie, is the de facto center of the Hudson Valley. The city is located midway between New York City and Albany, and is the largest principal city of the Poughkeepsie-Newburgh-Middletown Metropolitan Statistical Area, which encompasses all of Dutchess and Orange Counties. Poughkeepsie is the mid-Hudson Valley's regional governmental, educational, and cultural center and a civic center for federal, state, and county government offices.

Albany/Schenectady within the Capital District

The City of Albany is the state capital and is the seat of Albany County. Albany is the heart of the Capital District that includes the neighboring City of Schenectady. The City of Schenectady is the seat for Schenectady County. Both cities are part of the Albany-Schenectady-Troy Metropolitan Statistical Area, the fourth largest in the state, which grew by 9,665 persons, or 1.1 percent, from 2010 to a total population of 880,381 in 2019. Based on commuting patterns, Albany and Schenectady are part of a larger area defined by the federal government as the Albany-Schenectady-Amsterdam, New York Combined Statistical Area.

Albany and Schenectady have been a center for higher education as well as government and healthcare, for over a century, and the economies of both cities has historically been dependent on these three sectors. Albany is home to major institutions of higher learning including the Albany Medical Center, Albany Law School, Albany College of Pharmacy and Health Sciences, and University of Albany, State University of New York (aka SUNY Albany).

Utica

Utica is the seat of Oneida County and, along with the neighboring City of Rome, are the principal urban centers of the Utica-Rome Metropolitan Statistical Area. The population of the Utica-Rome Metropolitan Statistical Area lost 9,407 persons (or -3.1%) from 2010 to total 289,990 persons in 2019.

Syracuse

Syracuse is the seat of Onondaga County and the fifth largest city in the state. It is the center of the Syracuse Metropolitan Statistical Area, which lost population (-13,984 persons or -2.1%) from 2010 to 2019, totaling 648,593 persons in 2019. This MSA is part of a larger Syracuse-Auburn, New York Combined Statistical Area.

Syracuse is the economic and educational hub of Central New York. It has access to major convention sites in the downtown convention center complex and, west of the city, the Empire Expo Center (site of the annual Great New York State Fair). It is also home to Syracuse University, a major research institution; the State University of New York Upstate Medical University; and other colleges and universities.

Rochester

Rochester is the third largest city and the Rochester MSA represents the third largest regional economy in New York. Rochester is the county seat for Monroe County. The population of the Rochester MSA grew by 15,321 persons (or 1.5%) from 2010 to total 1,069,644 persons in 2019.

Based on commuting patterns, a larger area has been defined by the federal government as the Rochester-Batavia-Seneca Falls, New York Combined Statistical Area.

Rochester is a center for higher learning and medical/technological development. It is the home of the University of Rochester and the Rochester Institute of Technology.

Buffalo

Buffalo, the second most populous city in the state and the seat of Erie County, is located on the eastern shore of Lake Erie and at the head of the Niagara River. It is the principal city of the Buffalo-Cheektowaga-Niagara Falls Metropolitan Statistical Area, which lost population (-7,526 persons or -0.7%) from 2010 to total 1,127,983 in 2019. In 2019, this MSA was the second largest regional economy in the state. Today, healthcare and education are major stalwarts of the economy, with expansion of the Buffalo Niagara Medical Center and the University of Buffalo contributing to the city's economic growth.

4.3.4. Environmental Consequences

Comparison of Alternatives

With the Base Alternative, population and employment will continue to grow as projected, but mobility may be adversely impacted without additional transportation improvements to accommodate a larger populace and growing employment base, particularly in major employment centers, such as New York City. Under the Build Alternatives, the improvements to intercity passenger service that result in increases in ridership and improve mobility and travel choices may influence the attractiveness of the area for businesses and residents. This, in turn, could result in increases in population and employment, beyond those forecasted for 2035. With the Base Alternative, this effect, if discernible, will be a minimal increase. As speeds and ridership would increase under each of the Build Alternatives, this effect on population and employment is anticipated to become more pronounced, particularly in the vicinity of the station sites. Alternative 90A, although it would increase ridership and accrue mobility and economic benefits, these would not be as pronounced as for the Preferred Alternative. Although the higher speeds afforded by Alternatives 110 and 125 would result in larger increases in ridership and would present greater benefits for mobility and economic growth and development, these alternatives would also involve greater property displacements and direct impacts on businesses than the Preferred Alternative. The following section describes effects of the Preferred Alternative, and Appendices G.2 and G.3 describe the impacts on population and employment/businesses of the other alternatives considered. The following sections focus on long-term impacts, while short-term construction impacts are addressed in Section 4.25. The program has the potential for long-term economic benefits, as discussed in the following section, and the program construction could also be expected to generate positive economic benefits, both directly through job creation and indirectly through spending and other inputs into the economy.

Alternative 90B (Preferred Alternative)

Population

Alternative 90B would include the 90A improvements and provide further reductions in travel time, with a dedicated third track and sections of fourth track provided between Schenectady and Buffalo. Alternative 90B also proposes double track along 10 miles, and upgrades to 6 miles, of the Niagara Branch.

Overall, improved intercity passenger rail service, with more frequent trips and faster service, would improve mobility and travel choices, making the program area potentially more attractive to residents, commuters, and tourists. The United States Conference of Mayors report, *The Economic Impacts of High-Speed Rail on Cities and their Metropolitan Areas*, projects that incremental speed improvements in high-speed rail service would provide positive impacts on the tourism industry in the Capital District/Albany region, with a growth of visitors and increases in the local job base. The Preferred Alternative, Alternative 90B, could result in increases in population that would be greater than for the Base Alternative and Alternative 90A. This effect may be more pronounced in the vicinity of the station sites. These increases in ridership and the additional mobility benefit afforded cities and bedroom communities west of Albany may offset to some degree the projected decreases in population (from outmigration and/or deaths outpacing births) that forecasts indicate will occur by 2035 within counties along the Empire Corridor West/Niagara Branch.

Employment and Businesses

Faster travel times and more frequent service would better serve businesses and could potentially result in greater increases in employment and business activity than for the Base Alternative or Alternative 90A. Better segregation of passenger service and freight service by adding additional trackage between Schenectady and Buffalo, and any corresponding improvements in freight traffic, could provide more benefits to those businesses that rely on freight traffic, by increasing freight capacity. Alternative 90B is anticipated to potentially result in increases in business activity that would be greater than that for both the Base Alternative and Alternative 90A, particularly in the vicinity of the station sites, based on increased ridership and improved travel times and performance for both passenger rail and freight rail. The U.S. Conference of Mayors report projects that incremental speed improvements (79 to 90 mph) and more frequent service (32 roundtrips from NYC to Albany) could result in an addition of approximately 3,184 jobs in 2035 in the Capital District/Albany region alone. This report also forecasts increases in 2035 of sales output in the Capital District alone of \$357.9 million per year and increases in 2035 wages of \$158.7 million per year. Alternative 90B would involve isolated right-of-way impacts in limited areas in six counties. The limited property displacements for the Preferred Alternative could affect businesses.

4.3.5. Potential Mitigation Strategies

The mitigation considered will depend on the extent of impacts associated with the Preferred Alternative, Alternative 90B, which will be determined when this alternative is advanced in Tier 2 assessments. Mitigation measures could range from site-specific mitigation to general program-wide measures, and will depend on the level of impact determined in Tier 2. If required, NYSDOT will develop mitigation strategies in consultation with the affected communities, including discussion of station access, pedestrian accommodations, and connections to existing transit and highways. Potential site-specific mitigation strategies might include impact minimization/relocation of affected residences and businesses, improved grade crossing protection, and accommodation of pedestrian access. Short-term construction mitigation measures can include outreach to affected communities regarding potential traffic disruptions and compensation to affected property owners for use of affected property. Mitigation during construction is addressed in Section 4.25.

4.3.6. Future Analysis

The Tier 2 assessment will include further evaluation of improved service, ridership, and potential direct effects on localized population, employment, and businesses. The design and mapping

showing the proposed rights-of-way limits will be advanced.

NYSDOT will determine the need for the following evaluations in Tier 2 for the Preferred Alternative, as appropriate:

- Effects of property displacements and business impacts of these displacements and relocation studies;
- Effects on community cohesion for displacements within residential neighborhoods; and
- Effects on station and pedestrian access and vehicular traffic circulation on roadway networks around passenger rail stations.

4.4. Environmental Justice and Title VI

4.4.1. Regulatory Context

Environmental justice refers to social equity in sharing the benefits and burdens of a project or program. Title VI, enacted as part of the U.S. Civil Rights Act of 1964 (42 U.S.C. 2000d) prohibits discrimination on the basis of race, color, or national origin in federally assisted programs or activities. In addition, Title II of the U.S. Americans with Disabilities Act (42 U.S.C. 12101) and Section 504 of the U.S. Rehabilitation Act of 1973 (29 U.S.C. 794) prohibit discrimination on the basis of disability in all public transportation. Executive Order (EO) 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," requires each federal agency to identify and address, as appropriate, *"disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations."*⁵⁵

The United States Department of Transportation (U.S. DOT) issued Order 5610.2(a) to address environmental justice for minority and low-income populations.⁵⁶ The Council on Environmental Quality (CEQ) provides policy guidance in implementing NEPA⁵⁷ that defines minority and low-income populations as either:

- The minority or low-income population of the affected area exceeds 50 percent, or
- The population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographical analysis.

The New York State Department of Environmental Conservation (NYSDEC) Commissioner's Policy 29, Environmental Justice and Permitting, provides additional guidance on incorporating environmental justice concerns into environmental reviews and projects subject to the State Environmental Quality Review Act (SEQR), where NYSDEC has a lead agency role.⁵⁸ While NYSDEC is not a lead agency for the program, this guidance provides useful background information for an environmental justice analysis.

⁵⁵ Executive Order 12898. "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." Federal Register, Volume 59, No. 32, February 11, 1994.

⁵⁶ U.S. Department of Transportation, 2012. U.S. DOT Order 5610.2(a), "Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." Federal Register, Volume 77, No. 99, May 10, 2012.

⁵⁷ National Environmental Policy Act, 1969. Title II, Council on Environmental Quality. Amended, January 1, 1970, July 3, 1975, August 9, 1975 and September 13, 1982.

⁵⁸ NYSDEC, 2003. "Commissioner Policy 29, Environmental Justice and Permitting." New York State Department of Environmental Conservation, March 19, 2003.

NYSDEC's Environmental Justice Policy defines a minority community as a contiguous area with multiple census block groups, having a minority population equal to or greater than 51.1 percent of the total population in an urban area and 33.8 percent of the total population in a rural area. NYSDEC's Environmental Justice Policy defines a low-income community as one where the low-income population is equal to or greater than 23.59 percent of the total population.

The Statewide Language Access Policy⁵⁹ requires executive state agencies to offer language assistance services. It also requires translation of vital documents into the ten most common non-English languages spoken by limited English Proficiency (LEP) individuals, those speaking English "less than very well" according to the US Census Bureau. As of March 2021, this includes Spanish, Chinese, Russian, Yiddish, Bengali, Korean, Haitian Creole, Italian, Arabic, and Polish.

New York State's "Uniform State Policy" outlines American's with Disability Act requirements for state agencies in its *"Procedures for Implementing Reasonable Accommodation in Programs and Services for Individuals with Disabilities."* Percent of individuals who report any one of the six disability types on the Census, including hearing difficulty, vision difficulty, cognitive difficulty, ambulatory difficulty, self-care difficulty, and independent living difficulty, are considered to have a disability.

4.4.2. Methodology

Data on minority and low-income populations, LEP persons, persons at least 65 years of age, and persons with disabilities were collected and presented by county, the geographic unit used to map disadvantaged populations for this study. Similar population data was collected at the city level for the nine major cities along the corridor (as described in Section 4.4.1) to supplement the county-wide data. The 2020 U.S. Decennial Census data identified minority populations. The U.S. Census American Community Survey 5-Year Estimates (2015-2019) data for persons living below the poverty level identified low-income populations. The ACS data was also used to identify LEP persons, persons at least 65 years of age, and persons with disabilities.

These statistics were compared to statewide averages and minority and low-income populations were also compared to federal (CEQ) and state (NYSDEC) environmental justice criteria. Federal guidance on EJ allows for agencies to defer to state or local definitions of EJ populations, provided they are at least as inclusive as federal definitions. Federal EJ criteria is also presented, but the NYSDEC criteria is more conservative than the federal criteria in rural areas (for minorities) and for low-income. The NYSDEC criteria for race are different for urban and rural areas. The counties in both the 90/110 and the 125 Study Areas were considered to be urban areas, as defined by U.S. Census 2010 urban area boundaries, with the exception of Columbia, Schoharie, Herkimer, Madison, Cayuga, Wayne, and Genesee Counties.

Once the environmental justice populations were identified, a Tier 1 assessment of disproportionate impacts was completed for each of the alternatives. Within the future Tier 2 assessment, census block group data will be used to identify minority, low-income, and disadvantaged populations within the study area. This level of data may identify additional environmental justice communities not identified in Tier 1, which uses county level data.

⁵⁹ Governor's Executive Order 26.1 signed in March 2021, amended the original Executive Order 26 issued October 6, 2011.

4.4.3. Existing Conditions

Overview

The environmental justice study area consists of 20 counties for the 90/110 Study Area and 21 counties for the 125 Study Area, as these study areas are defined in Section 4.1. Exhibit 4-7 shows the minority and low-income populations for the study area. Overall, the State of New York has a minority population of 47.5 percent and a low-income population of 14.1 percent. The NYSDEC criteria for environmental justice include a minority population equal to or greater than 51.1 percent in urban areas. This Environmental Justice assessment considered this to be the threshold for a potential environmental justice area for most of the study area counties except for seven rural counties (Columbia, Schoharie, Herkimer, Madison, Cayuga, Wayne, and Genesee Counties), where the threshold of 33.8 percent for minority populations applied. The NYSDEC criterion for a low-income population is 23.59 percent. The environmental justice statistics were generally higher in the cities than for the counties along the rail corridor, as shown in Exhibit 4-7.

The following sections describe the environmental justice characteristics for the 90/110 Study Area. Appendix G.4 discusses the statistics for minority, low-income, and disadvantaged populations in each county for the 125 Study Area along the Empire Corridor West/Niagara Branch.

Empire Corridor South

The Empire Corridor South segment, from New York City to Rensselaer, extends 142 miles and in many locations closely follows the east bank of the Hudson River. All of the Build Alternatives follow the existing Empire Corridor South for the majority of its length, deviating only in Rensselaer County, where the 125 Study Area splits off 1.6 miles south of where the existing Empire Corridor (the 90/110 Study Area) turns to the west. This program segment includes the study area counties of New York County (Manhattan Borough), Bronx County, Westchester County, Putnam County, Dutchess County, Columbia County, and Rensselaer County.

The most urbanized segment of the study area extends roughly 10 miles through New York City from Pennsylvania Station (the southern terminus of the Empire Corridor) in Manhattan north to the border of Yonkers in Westchester County. The study area extends through Manhattan (New York County) and the Bronx (Bronx County). Minority populations in New York County and Bronx County are the highest of any county in the Empire Corridor study area. Minority populations are 69.1 percent (up from 42.6 percent in 2010) for **New York County** and 91.1 percent (up from 72.1 percent in 2010) for **Bronx County**, compared to 47.5 percent for the state as a whole. Both counties exceeded the NYSDEC criterion (51.1%) for minority populations. Low-income populations are also among the highest of all Empire Corridor counties, with 15.8 percent and 28.0 percent of persons living below the poverty level in New York County and Bronx County, respectively. Both counties have low-income populations above statewide averages (14.1%), although only Bronx County exceeded the applicable NYSDEC criterion of 23.59 percent. In addition, New York City itself, which includes three other counties/boroughs outside the program area, has a minority population of 69.1 percent and 17.9 percent of persons living below the poverty level. The minority population of the city exceeds the applicable NYSDEC (51.1%) for minority populations in an urban area.

Persons with Limited English Proficiency (LEP) make up 26.0 percent of the population in the Bronx, the highest percentage of any county along the Empire Corridor. LEP persons comprise 14.8 percent of the New York County population, slightly higher than for the entire State of New York (13.3%). At 22.5 percent, New York City has a higher proportion of LEP persons than any city along the Empire

Corridor.

The percent of the population that is at least 65 years of age in New York County (16.2%) is similar to that of the entire State of New York (16.1%). Persons that are at least 65 account for 12.5 percent of the Bronx County population. A total of 10.3 percent of the New York County population and 15.2 percent of the Bronx County population have a disability. For comparison, a total of 11.5 percent of the entire State of New York population have a disability. A total of 14.5 percent of the New York City population are at least 65 years of age, and a total of 10.8 percent have a disability.

As the alignment moves north, it enters the Hudson Valley Region consisting of Westchester, Putnam, Dutchess and Columbia Counties. The major populated center in **Westchester County** is the city of Yonkers. Outside these populated centers, the area around the alignment is dominated by surface waters and forested land associated with the Hudson River. The minority population is just under the NYSDEC criterion of 51.1 percent at 50.5 percent and is higher than the statewide average. The low-income population drops to 8.8 percent. The city of Yonkers itself continues to have a high minority population (67.4%), but a lower low-income population (14.9%), both below the NYSDEC criterion.

LEP persons in Westchester County account for 12.9 percent of the total population, slightly lower than in the State of New York (13.3%). A total of 16.7 percent of the population is at least 65 years of age in the county and a total of 9.5 percent have a disability. Persons that are at least 65 years of age make up 16.5 percent of the city of Yonkers population, while persons that have a disability make up 12.0 percent.

Entering **Putnam County**, the alignment passes through the village of Cold Spring; however, the area around the alignment is primarily natural areas consisting of forested land and surface waters. The minority population and low-income population in Putnam County are lower compared to other counties along the alignment at 26.3 percent and 5.0 percent, respectively. The low-income population in Putnam County is the lowest of any of the counties in the Empire Corridor study area.

LEP persons account for 5.1 percent of the Putnam County population, as compared to 13.3 percent for the entire State of New York. A total of 16.7 percent of the Putnam County population is at least 65 years of age, and a total of 9.9 percent have a disability.

In **Dutchess County**, the minority population increases to 32.9 percent while the low-income population remains relatively low at 9.0 percent. The increase in minority population in this County is likely due to the alignment passing through the major urban center of Poughkeepsie, which has a minority population of 65.6 percent and a low-income population of 19.4 percent. As the alignment enters **Columbia County**, it passes through less developed land and the minority population drops to 17.5 percent and the low-income population remains low at 11.6 percent. The proportion of the Columbia County population that is LEP is low (3.0%).

The proportion of the Dutchess County population that is at least 65 years of age (17.1%) is somewhat higher than the State of New York (16.1%). The proportion of persons with disabilities is also somewhat higher (12.7%) than the State of New York (11.5%). The proportion of persons that are at least 65 years of age is higher in Columbia County (23.1%) than any county along the Empire Corridor. Persons with disabilities account for 14.8 percent of the population in this county. The major urban center located along the alignment in Columbia County is the city of Hudson.

Entering **Rensselaer County**, the alignment leaves the Hudson Valley Region and enters the Capitol

District Region (made up of Rensselaer, Albany and Schenectady counties). Primarily, the area around the alignment is rural or residential in the south portion of this area; however, as the alignment approaches the city of Rensselaer in the north, the population density increases, and the suburbs of the Albany-Rensselaer area are located along the alignment. There is a slight increase in minority and low-income populations associated with this urban area. Rensselaer County has a minority population of 22.7 percent and a low-income population of 11.7 percent. LEP persons comprise 2.4 percent of the population, which is fairly low compared to all other counties along the Empire Corridor. The percent of persons with disabilities is 14.0 percent.

Empire Corridor West/Niagara Branch: 90/110 Study Area

The 322-mile long Empire Corridor West/Niagara Branch 90/110 Study Area, with the exception of the metropolitan areas within and surrounding the major cities, has a distinctively more rural agricultural character than the segment to the south.

As the railroad leaves Rensselaer County and enters Albany County, it crosses the Hudson River and passes through the city of Albany before heading northwest towards the city of Schenectady in Schenectady County. The area between these cities is generally more populated and developed and there is a slight increase in minority and low-income populations in these two counties. The minority population is 33.0 percent in Albany County and 33.6 percent in Schenectady County. The low-income population is 11.9 percent in Albany County and 11.4 percent in Schenectady County. The minority population is above the NYSDEC criterion (51.1%) at 55.3 percent in the city of Albany. The low-income population is below the 23.59 percent NYSDEC criterion at 22.9 percent. In the city of Schenectady, the minority population is above the NYSDEC criterion at 56.5 percent but the low-income population is below the NYSDEC criterion at 19.4 percent.

LEP persons comprise 4.7 percent of the Albany County population and 3.5 percent of the Schenectady County population. The percent of persons at least 65 years of age in Albany County (16.5%) and the percent of persons with disabilities (11.3%) are both similar to the entire State of New York (16.1% and 11.5%, respectively). Alternatively, the percent of persons at least 65 years of age in Schenectady County (16.8%) and percent of persons with disabilities (13.5%) are both slightly higher than the State of New York.

The LEP population is 6.5 percent in the city of Albany and 5.0 percent in the city of Schenectady. In the city of Albany, the percent of people with disabilities (13.0%) is slightly higher than that for the state, and the percent of persons at least 65 years of age is lower (at 12.9%). In the city of Schenectady, a total of 13.8 percent of persons are at least 65 years of age, and a total of 16.2 percent of persons have a disability, which is higher than the state as a whole.

As the railroad leaves Schenectady County and the Capitol District Region and heads primarily west, it enters Montgomery County and then Herkimer County. These counties are generally more rural along the alignment, but pass through the populated centers of Amsterdam in Montgomery County and Little Falls and the city of Herkimer in Herkimer County. The minority population is 22.8 percent in Montgomery County and 9.1 percent in Herkimer County, the lowest of any county in the Empire Corridor study area. Low-income populations in Montgomery and Herkimer counties are 19.8 percent and 13.6 percent, respectively. The low-income population in Montgomery County is higher than the statewide average (14.1%), but is below the NYSDEC criterion (23.59%).

LEP persons comprise 4.4 percent and 1.4 percent of the Montgomery County and Herkimer County populations, respectively. A total of 18.3 percent of the population in Montgomery County is at least

65 years of age, compared to a total of 20.1 percent in Herkimer County. A total of 16.5 percent of the population in Montgomery County has a disability, as compared to a total of 16.0 percent in Herkimer County.

The railroad enters Oneida County west of Herkimer County. Oneida County is primarily rural with urban populations centered on the city of Utica. There is a minority population of 22.0 percent and a low-income population of 15.5 percent in Oneida County. This is a slight increase from the adjacent Herkimer County to the east. The minority population is below the NYSDEC criterion (51.1%) at 47.6 percent in the city of Utica; however, the low-income population is above the 23.59 percent NYSDEC criterion at 29.4 percent.

LEP persons comprise 4.9 percent of the Oneida County population. Persons that are at least 65 years of age represent 18.4 percent of the population, and persons with a disability represent 14.4 percent. The city of Utica has 14.5 percent LEP persons and 16.7 percent persons with disabilities, both higher than the state as a whole. The population of persons at least 65 years of age in the city of Utica is lower than the state as a whole, with 15.2 percent.

Continuing west, the railroad enters the Central New York Region, which is made up of Madison, Onondaga and Cayuga counties. Madison County is generally rural, and the minority and low-income populations are generally low at 10.4 percent and 9.8 percent, respectively. The LEP population is also low at 1.1 percent in Madison County. As the railroad moves west into Onondaga County, it passes through the larger city of Syracuse. In this county, the minority and low-income populations increase to 27.1 percent and 14.1 percent, respectively, likely due to the city of Syracuse. The minority population was formerly (in 2010) below the NYSDEC criterion (51.1%), at 44.0 percent, but is now 54.1 percent after updates from the 2020 census, in the city of Syracuse; and the low-income population is above the 23.59 percent NYSDEC criterion at 31.0 percent. LEP persons make up 4.0 percent of the Onondaga County population. Only a small segment of the railroad passes through the more rural Cayuga County. The minority population is 13.0 percent and the low-income population is 12.1 percent in Cayuga County. LEP persons comprise 1.3 percent of the Cayuga County population.

In Madison County, the percentages of people with a disability (12.4%) and persons at least 65 years of age (17.6%) are slightly higher than for the state as a whole. In Onondaga County, these percentages also exceed those for the state, with a total of 16.6 percent of the population is at least 65 years of age, and a total of 12.7 percent of the population has a disability. The percent of persons at least 65 in Cayuga County is also higher, at 18.4 percent, and the percent of persons with a disability in Cayuga County is 14.6 percent.

The Finger Lakes Region consists of four counties: Onondaga, Cayuga (also included in the Central New York Region), Wayne and Monroe. Wayne County is similar to Cayuga County with a minority population of 13.2 percent, a low-income population of 11.6 percent and a LEP population of 1.7 percent. However, as the railroad enters Monroe County it passes through the major city of Rochester and its suburbs of East Rochester, Fairport and Gates. There is an increase in the minority and the low-income population to 33.4 percent and 14.4 percent, respectively, in Monroe County. Both the minority population and the low-income population are above the NYSDEC criterion in the city of Rochester, 67.0 percent and 31.3 percent, respectively. There is also an increase in the proportion of LEP persons in Monroe County (5.5%) and the city of Rochester (9.5%).

A total of 18.4 percent of the population in Wayne County is at least 65 years of age and 15.3 percent have a disability, which exceed percentages for the state as a whole. In Monroe County, the

proportion of persons above the age of 65 (16.9%) and the proportion of persons with a disability (13.9%) are also higher than for the state as a whole. The population of the City of Rochester has 18.7 percent people with disabilities and 10.9 percent persons at least 65 years of age.

The railroad leaves the Rochester area and enters Genesee County to the west where it transitions back to a more rural area. The minority population drops to 12.7 percent in Genesee County, and the LEP population drops to 1.0 percent. The low-income population decreases slightly to 10.9 percent. Entering the Buffalo-Niagara region, the railroad passes through Erie and Niagara Counties and terminates in Niagara Falls. In Erie County, the rail corridor passes through the city of Buffalo. The minority population in Erie County increases to 28.9 percent and the low-income population increases slightly to 14.2 percent. The percentage of persons at or below the poverty level is slightly above the statewide average of 14.1 percent, but is below the NYSDEC criterion of 23.59 percent. The minority population was formerly (in 2010) below the NYSDEC criterion (51.1%), at 49.6 percent but increased in 2020 to 61.0 percent, in the city of Buffalo; the low-income population is above the 23.59 percent NYSDEC criterion at 30.1 percent. The LEP population decreases to 3.9 percent in Erie County and increases to 8.1 percent in the City of Buffalo. Niagara Falls is the main urban center in Niagara County and the terminus of the Empire Corridor. The minority population is 18.3 percent, the LEP population is 1.7 percent and the low-income population is 13.5 percent in Niagara County.

In Genesee County, a total of 18.3 percent of persons are at least 65, and a total of 14.7 percent of persons have a disability, which is higher than for the state as a whole. In Erie County, the percentage of persons at least 65 decreases to 17.6, and the percentage of persons with a disability decreases to 13.2 percent, but these exceed the percentages for the state as a whole. In Niagara County, the percent of persons at least 65 years of age is 18.6, and the percent of persons with a disability are 13.9 percent.

4.4.4. Environmental Consequences

Overview

Environmental justice is defined as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Environmental justice efforts focus on improving the environment in communities, specifically minority and low-income communities, and addressing disproportionately high and adverse environmental impacts that may exist in those communities.

Disproportionately high and adverse effects are defined as either of the following:

- A negative impact predominantly borne by minority or low-income households,
- A negative impact experienced by these populations in a way that is appreciably more severe or greater in magnitude than would be experienced by non-minority or non-low-income populations.

At the county level, the long-term impacts of this program of improvements under any of the alternatives is unlikely to result in disproportionately high and adverse impacts to minority and low-income communities, as the program will provide improved transportation access to all persons, while community and residential displacement will be minimized with the location of added new tracks largely within the existing right-of-way. Tier 2 analysis will include a more detailed and refined study to document the presence of low-income and minority communities, and then to evaluate if the Preferred Alternative, Alternative 90B, would involve disproportionately high and adverse site-

Exhibit 4-7—Minority, Low-income, and Disadvantaged Population Percentages by County/Major City Along the Empire Corridor Study Area

County	Major City	Percent Minority ¹	Percent Low-income ^{2,3}	Percent LEP ⁴	Percent Disabled ⁵	Percent Over 65 ⁶
New York		53.2	15.8	14.8	10.3	16.2
Bronx		91.1	28	26	15.2	12.5
	New York City⁹	69.1	17.9	22.5	10.8	14.5
Westchester		50.5	8.8	12.9	9.5	16.7
	Yonkers	67.4	14.9	18.6	12	16.5
Putnam		26.3	5	5.1	9.9	16.7
Dutchess		32.9	9	4.7	12.7	17.1
	Poughkeepsie	65.6	19.4	6.8	16.8	16.0
Columbia ⁷		17.5	11.6	3	14.8	23.1
Rensselaer		22.7	11.7	2.4	14	16.5
Albany		33.0	11.9	4.7	11.3	16.5
	Albany	55.3	22.9	6.5	13	12.9
Schenectady		33.6	11.4	3.5	13.5	16.8
	Schenectady	56.5	19.4	5.0	16.2	13.8
Schoharie ^{7,8}		10.3	12.1	1	16.5	21
Montgomery		22.8	19.8	4.4	16.5	18.3
Herkimer ⁷		9.1	13.6	1.4	16	20.1
Oneida		22.0	15.5	4.9	14.4	18.4
	Utica	47.6	29.4	14.5	16.7	15.2
Madison ⁷		10.4	9.8	1.1	12.4	17.6
Onondaga		27.1	14.1	4	12.7	16.6
	Syracuse	54.1	31	7.1	15.8	12.6
Cayuga ⁷		13.0	12.1	1.3	14.6	18.4
Wayne ⁷		13.2	11.6	1.7	15.3	18.4
Monroe		33.4	14.4	5.5	13.9	16.9
	Rochester	67.0	31.3	9.5	18.7	10.9
Genesee ⁷		12.7	10.9	1	14.7	18.3
Erie		28.9	14.2	3.9	13.2	17.6
	Buffalo	61.0	30.1	8.1	16.3	12.4
Niagara		18.3	13.5	1.7	13.9	18.6
State of New York		47.5	14.1	13.3	11.5	16.1
NYSDEC		51.1/33.8	23.59			

^{1/} NYSDEC's Environmental Justice Policy (Commissioner's Policy 29, "Environmental Justice and Permitting," NYSDEC Policy, Issuing Authority: Commissioner Erin M. Crotty, Date Issued: 3/19/03) defines a minority community as a contiguous area with multiple census block groups, having a minority population equal to or greater than 51.1 percent of the total population in an urban area and 33.8 percent of the total population in a rural area.

^{2/} Percent of **individuals** living below the poverty level

^{3/} NYSDEC's Environmental Justice Policy defines a low-income community as one where the low-income population (i.e., persons living below the poverty threshold) is equal to or greater than 23.59 percent of the total population.

^{4/} An individual is considered to be LEP if he or she speaks English less than —very well according to the US Census Bureau.

^{5/} Percent of individuals who report any one of the six disability types are considered to have a disability, including hearing difficulty, vision difficulty, cognitive difficulty, ambulatory difficulty, self-care difficulty, and independent living difficulty.

^{6/} According to the Census, population aging is commonly measured as an increasing median age or a rising share of the population above a certain age, such as 65.

^{7/} Considered a rural county based on U.S. Census Bureau urban area 2010 boundaries.

^{8/} Only for the 125 Study Area.

^{9/} New York City also includes three other counties/boroughs besides New York (Manhattan) and Bronx.

Bold and italicize indicates communities that exceed the minority or low-income community thresholds

Source: U.S. 2020 Decennial Census (2015-2019 American Community Survey 5-Year Estimates)

specific effects on those communities. Short-term impacts related to construction are discussed in Section 4.25.3.

Comparison of Alternatives

Since there are fewer improvements in the Base Alternative compared with the various Build Alternatives, there will also be fewer benefits in terms of increased service and reliability to the low-income and minority communities, as well as populations protected under Title VI (Limited English Proficiency populations, and persons with disabilities and at least 65 years of age). Proposed work for the Preferred Alternative would not likely result in disproportionately high and adverse impacts to these minority and/or low-income communities since work would primarily be within the current right-of-way. All of the Build Alternatives would provide increased transit options that would provide a benefit for the minority, low-income, and other disadvantaged communities. Alternative 90A and Alternative 90B, the Preferred Alternative, would require less displacements and property impacts compared to Alternatives 110 and 125. Therefore, Alternatives 110 and 125 have a greater potential for impacts on disadvantaged populations.

The program plans track improvements and upgrades for all alternatives in urban locations like New York, Yonkers, Poughkeepsie, Albany, Schenectady, Utica, Syracuse, Rochester and Buffalo where minority or low-income population (or both) register above noted criterion. With Alternative 90A and Alternative 90B, the Preferred Alternative, upgrades to stations and increased trip frequency would ultimately provide a benefit to communities. Disproportionately high and adverse impacts to minority, low-income, or disadvantaged communities would be unlikely with these alternatives, as both involve minimal property impacts. Increased frequency of service could have the potential to incur additional noise impacts from train passbys, however the additional trips represent a minimal increase over current rail traffic that includes frequent CSXT freight rail and Metro-North commuter rail traffic. Construction of the program could involve temporary noise and air quality impacts, but these would be temporary in nature. The Preferred Alternative would also involve lesser visual impacts than Alternative 110 and 125, but greater visual impacts than the Base Alternative and Alternative 90A.

The following section addresses the impacts of the Preferred Alternative, and Appendix G.4 presents impacts of the other alternatives considered.

Alternative 90B (Preferred Alternative)

Alternative 90B station upgrades, travel time reduction, and increased trip frequency would ultimately provide a benefit to communities. Disproportionately high and adverse impacts to minority or low-income communities would be unlikely.

It is unlikely that there would be a disproportionately high and adverse impact to minority or low-income communities at the county-level. Bronx County exceeded NYSDEC environmental justice criterion; however, second track improvements proposed for Bronx County (MPs 9 to 13) would occur within the current right-of-way and would be unlikely to have a disproportionately high and adverse impact to minority and low-income communities in this area. Construction may involve noise and dust impacts and would be short-term in nature, but these would likely not disproportionately affect EJ/disadvantaged populations, because mitigation measures will be employed to minimize any impacts or disruptions to nearby properties and uses. Construction would be staged to minimize residential and business impacts to the extent practicable.

Proposed signal upgrades, station improvements and areas of extra track proposed along the corridor would occur within the major urban areas of Poughkeepsie, Albany, Syracuse and Rochester.

Minority and/or low-income populations that exceed the NYSDEC criterion are located in these improvement areas; however, the Preferred Alternative improvements, which includes Alternative 90A projects, (including signal upgrades and extra track) are anticipated to be contained within the existing right-of-way. Therefore, property impacts would not occur, and disproportionately high and adverse impacts to minority or low-income communities would be unlikely. The Preferred Alternative, Alternative 90B, will not increase noise levels over the Base Alternative between New York City and Schenectady, and the increases west of this point would be imperceptible (0 to 2 decibels). Construction may involve noise impacts, but these would be short-term in nature and would be staged to minimize residential and business impacts. Station improvements for the Preferred Alternative at the Syracuse and Buffalo-Depew stations also are anticipated to be contained within the right-of-way, but would involve larger construction impacts (e.g., temporary noise increases); however, upgrades to the stations and increased trip frequency would ultimately provide a benefit to these communities and disproportionately high and adverse impacts to minority or low-income communities would be unlikely. Construction may involve noise and dust impacts, but these would not disproportionately affect EJ/disadvantaged populations and would be short-term in nature.

Alternative 90B includes doubletracking along ten miles of the Niagara Branch. It is unlikely that there would be disproportionately high and adverse impacts to minority or low-income communities at the county-level for these improvements, since it is anticipated to involve no or minimal residential displacements or encroachments. Construction may involve noise and dust impacts and would be short-term in nature, but these would likely not disproportionately affect EJ/disadvantaged populations, because mitigation measures will be employed to minimize any impacts or disruptions to nearby properties and uses. Construction would be staged to minimize residential and business impacts to the extent practicable. The majority of the Empire Corridor West/Niagara Branch passes through rural land; however, there are planned third and fourth track improvements that would occur in more urban locations. These include the cities of Schenectady, Utica, Syracuse, Rochester and Buffalo. Minority and/or low-income communities that exceed the NYSDEC criterion are located in the cities of Schenectady, Utica, Syracuse, Rochester and Buffalo; however, third and fourth tracks would generally be added within the existing right-of-way and would be unlikely to have disproportionately high and adverse impacts to minority or low-income communities both for long-term operation and during the construction program. Temporary impacts during construction could temporarily result in elevated noise or air quality impacts, but mitigation measures will be employed to minimize any impacts or disruptions to nearby properties and uses.

4.4.5. Potential Mitigation Strategies

For the Preferred Alternative, Alternative 90B, for displacements or other property impacts, a more detailed and refined study will be completed as part of the Tier 2 analysis to document the presence of low-income and minority communities, and then to evaluate if there would be disproportionately high and adverse site-specific effects on those communities. Public outreach efforts would continue as design of the Preferred Alternative is advanced during Tier 2 analysis. Construction mitigation is described in Section 4.25.

4.4.6. Future Analysis

Within the Tier 2 assessments, any residential property displacements will consider and evaluate census block group data to identify minority and low-income populations within the study area as outlined in NYSDOT and NYSDEC guidance. This level of data may identify additional environmental

justice communities not identified in the Tier 1 analysis

To evaluate if there would be disproportionately high and adverse effects on these communities, Tier 2 studies would involve a quantitative analysis for parameters that have the potential to affect these communities, such as:

- Right-of-way (number of acquisitions in low-income or minority communities versus in the general reference population),
- Noise and vibration (number of noise and vibration impacts in low-income or minority community versus in the general reference population),
- Other applicable parameters that may directly or indirectly affect identified environmental justice communities.
- Permitting by the NYSDEC through Commissioner's Policy 29 for environmental justice may be required depending on the results of the Tier 2 analysis.⁶⁰ This policy provides guidance for incorporating environmental justice concerns into the NYSDEC environmental permit review process for individual projects in the program.

4.5. Community and Public Facilities

4.5.1. Regulatory Context

The Federal Railroad Administration's Procedures for Considering Environmental Impacts (Federal Register, Vol. 64, No. 101, May 26, 1999), states that: *"the following aspects of potential environmental impact should be considered:...solid waste disposal...impacts on the socioeconomic environment, including...the potential for community disruption...and impacts on local government service...Public health; Public safety..."*

4.5.2. Methodology

Community and public facilities were identified for study areas within 1,000 feet of the centerline for all alternatives, based on review of available mapping and information. This inventory identified facilities that provide services to the public and gathering places and cultural centers such as museums and arenas. Data was collected on schools, colleges, fire stations, police stations, medical facilities (hospitals, emergency services, and medical offices), post offices, libraries, and places of worship. Also identified were public facilities, such as military facilities; government offices; Departments of Public Works/maintenance; sewer, solid waste, landfill, and recycling/transfer facilities; prisons; airports; cemeteries; and tourist information centers.

The New York State Geographic Information Systems Clearinghouse provided information on federal and state non-recreation property, schools and colleges, government offices, libraries, points of interest, and tourist information centers. A review of Google aerial photography and maps was performed to identify other community and public facilities within the 2,000-foot-wide study area for both corridors. This review included publicly accessible facilities, such as golf courses or golf clubs that are privately owned, but are either open to the public or used for recreation by members.

⁶⁰ NYSDEC. "Commissioner Policy 29, Environmental Justice and Permitting." March 19, 2003.

4.5.3. Existing Conditions

There were a total of 224 community and public facilities located within 1,000 feet of the centerline for the 90/110 Study Area. Of these, approximately 81 community and public facilities are located along Empire Corridor South (142 miles in length), and 141 are located along Empire Corridor West/Niagara Branch (322 miles in length). For the 125 Study Area, there were 161 community and public facilities located within 1,000 feet of the corridor centerline. Of the facilities in the 125 Study Area, approximately 80 are located along Empire Corridor South and 81 are located along Empire Corridor West. Community facilities are summarized in Exhibit 4-8 and Exhibit 4-9 and are also described and shown in Appendix G.5 and Exhibit G-4 of Appendix G.

Exhibit 4-8—Educational, Emergency/Medical, Government, and Religious Facilities in the Study Area

Counties	School, College		Fire, Police		Medical		Post Office		Library		Places of Worship		Govt. Office	
	90/110 Study Area	125 Study Area	90/110 Study Area	125 Study Area	90/110 Study Area	125 Study Area	90/110 Study Area	125 Study Area	90/110 Study Area	125 Study Area	90/110 Study Area	125 Study Area	90/110 Study Area	125 Study Area
New York	18	18			2	2	1	1	1	1				
Bronx	1	1			1	1								
Westchester	7	7	1	1	4	4	2	2	3	3			2	2
Putnam			1	1							1	1		
Dutchess	4	4	1	1	4	4	1	1	1	1				
Columbia							1	1						
Rensselaer							3	3	2	1	3	3	2	2
Albany	2			1		1	1					1	1	
Schenectady	1						1		1				2	
Schoharie		1						1						1
Montgomery			3		2		3		3		5		6	
Herkimer					2		1				2			
Oneida														
Madison		1	1			1			2		1	1		
Onondaga	2	1	1				3	2	2	1	2	1	1	1
Cayuga		1												
Wayne	2		2				1			1	1		1	
Monroe	3	3					1	1	1	1	3	3	1	1
Genesee							2		2		3		2	
Erie	3	3	1		1		1		1	1			3	4
Niagara	2	2	1	1							1	1	2	2
TOTAL	45	42	12	5	16	13	22	12	19	10	22	11	23	13
Note: The 90/110 Study Area is used for analysis of Alternatives 90A, 90B, and 110 and consists of the existing 464-mile long Empire Corridor alignment. The 125 Study Area is used for analysis of Alternative 125 and consists of portions of the existing Empire Corridor and new alignment and is 450 miles long. The study area width is defined as being within 1,000 feet of the corridor centerline.														

Exhibit 4-9—Military, Cultural, DPW/Solid Waste, Correctional, Airport, and Cemetery Facilities in the Study Area

Counties	Military		Cultural, Museum		DPW Solid Waste Sewer		Correctional Institution		Airport		Cemetery		Total ALL Facilities	
	90/110 Study Area	125 Study Area	90/110 Study Area	125 Study Area	90/110 Study Area	125 Study Area	90/110 Study Area	125 Study Area	90/110 Study Area	125 Study Area	90/110 Study Area	125 Study Area	90/110 Study Area	125 Study Area
New York			1	1									23	23
Bronx													2	2
Westchester	1	1	2	2			1	1					23	23
Putnam	1	1											3	3
Dutchess			1	1	4	4							16	16
Columbia			2	2							1	1	4	4
Rensselaer													10	9
Albany		1	1	5	1								6	9
Schenectady	1		1	1							1	2	8	3
Schoharie													0	3
Montgomery			3	1	2					1	3		30	2
Herkimer				1							2		7	1
Oneida			2	1	1		1						4	1
Madison			1									2	5	5
Onondaga			2	3					1	2	3	2	17	13
Cayuga			1								1		2	1
Wayne			1								1		9	1
Monroe			4	5	1	1							14	15
Genesee			1										10	0
Erie			2	5			3		1		4	5	20	18
Niagara	1	1							1	1	1	1	9	9
TOTAL	4	4	25	28	9	5	5	1	3	4	17	13	224	161
Note: The 90/110 Study Area is used for analysis of Alternatives 90A, 90B, and 110 and consists of the existing 464-mile long Empire Corridor alignment. The 125 Study Area is used for analysis of Alternative 125 and consists of portions of the existing Empire Corridor and new alignment and is 450 miles long. The study area width is defined as being within 1,000 feet of the corridor centerline.														

4.5.4. Environmental Consequences

Comparison of Alternatives

The sections below describe impacts to community and public facilities, including cultural sites. Review of aerial mapping indicates that the Base Alternative, Alternative 90A, and Alternative 90B (the Preferred Alternative) would have minimal impacts to community and public facilities. These alternatives would largely involve work within the right-of-way, with tracks being added in the location of the former track beds or existing access roads. For Alternative 110, greater impacts to community facilities will occur, due to the more urbanized corridor and greater property takings required, and Alternative 125 has the greatest potential to affect public and cultural facilities. Alternative 125 would displace a far greater number of properties and land, including undeveloped

or parklands, but is located along a more rural corridor. The proposed work will include the addition of track, as well as maintenance service roads in selected areas.

Because proposed work with the Base Alternative and Alternative 90A are anticipated to be located entirely within the right-of-way, no land acquisitions are anticipated, and therefore no direct impacts to community facilities are anticipated. Alternative 125 has the potential to affect 13 community/publicly used facilities (including cemeteries, privately owned golf courses/golf clubs, and a school ballfield) in 8 counties largely where it extends on new right-of-way. By comparison, Alternative 110 is projected to have potential effects on 4 community facilities (e.g., fire stations, post office) in 1 county. The other alternatives (including the Preferred Alternative, Alternative 90B) are not expected to have any direct impacts to community facilities. Appendix G.5 addresses potential impacts of the other alternatives considered, and the following section addresses potential effects of the Preferred Alternative.

Increased frequency of service could have the potential to incur additional visual and noise impacts from train passbys, however the additional trips represent a minimal increase over current rail traffic that includes frequent CSXT freight and Metro-North commuter rail traffic (see discussion in Section 4.21). Relocations of adjoining roadways may indirectly affect community facilities (e.g., through property acquisition or changes in access), and would be better defined in Tier 2 including measures to avoid or minimize any adverse effects. Short-term impacts related to construction are discussed in Section 4.25.3.

Alternative 90B (Preferred Alternative)

Alternative 90B would provide further reductions in travel time, by adding 273 miles of dedicated third track and sections of fourth track (totaling 39 miles) between Schenectady and Buffalo. The new tracks would be offset 15 feet from the existing railroad and from each other. Alternative 90B also proposes double track along five miles of the Niagara Branch.

Empire Corridor South

The Preferred Alternative include Alternative 90A projects along Empire Corridor South. For this work within the right-of-way, no impacts on community facilities are anticipated to occur.

Empire Corridor West/Niagara Branch

- Improvements for Alternative 90B would start at MP 159.5 in the City of Schenectady and would extend west. At MP 160, the proposed siding and crossover would be adjacent to a state agency office and the Empire State College of the State University of New York, but would not extend outside of the right-of-way.
- At MP 168, Vedder Cemetery is mapped just north of the railroad. Although Alternative 90B extends outside of the right-of-way to the west of this point to connect to the Selkirk Branch, the proposed third track and maintenance service road is within the right-of-way immediately adjacent to the cemetery.
- Work that may extend outside of the right-of-way between MPs 234 to 238 around the Boehlert Transportation Center at Union Station (Utica Station) in Oneida County and around the William F. Walsh Regional Transportation Center, or Syracuse Station, (MPs 291 to 292) will be located within an urban area and will not affect community facilities. New passenger tracks will be added south of the tracks in the areas adjoining Alliance Stadium, a minor league baseball stadium in Syracuse, but will not directly affect the facility.

- In Monroe County, the addition of a fourth track around the Rochester Station could also involve right-of-way impacts (MPs 371 to 376 and MPs 378.2 to 378.6, and MPs 379.15 to 379.6), this work will extend in the vicinity of facilities such as Frontier Field, a minor league baseball stadium, but will not directly affect community facilities.

There are also locations where relocations of adjoining roadways may result in indirect impacts to community facilities, but these locations would be better defined in Tier 2.

4.5.5. Potential Mitigation Strategies

During the Tier 2 assessment, the design of the Preferred Alternative, Alternative 90B, will be refined to avoid or minimize impacts on community facilities to the extent feasible. If appropriate, relocation planning and studies will be performed as part of Tier 2, and relocation assistance provided in compliance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (42 U.S.C. 4601 et seq.). Other considerations will include the visual and noise impacts on adjoining or affected community facilities, and further assessments of these impacts will also be advanced in Tier 2.

4.5.6. Future Analysis

The Tier 2 assessments will include a thorough inventory of community facilities that may be affected by Alternative 90B, the Preferred Alternative, including water supplies, municipal buildings, offices, schools, libraries, and other cultural institutions. Detailed property mapping and information on ownership and the extent of public use of community facilities in the vicinity of the program will be obtained. If any impacts may occur, consultation with public officials and property owners/officials with jurisdiction will be performed regarding potential impacts and mitigation measures, as appropriate.

4.6. Surface Waterbodies and Watercourses

4.6.1. Regulatory Context

The U.S. Clean Water Act (1972 amendments to the Federal Water Pollution Control Act) is the cornerstone of surface water quality protection in the United States and provides for the regulation of the discharge of pollutants from point sources to waters of the U.S.⁶¹ Under the Section 404 of the CWA, impacts to waters of the U.S., including open water features, must be avoided, minimized, or mitigated (in order of preference), with the goal of achieving no net loss of functions and values of jurisdictional wetlands (33 United States Code 1251 et seq.). Section 303(d) of the U.S. Clean Water Act requires states, as part of required periodic assessment and reporting, to identify Impaired Waters, where specific designated uses are not fully supported. For these Impaired Waters, states must consider the development of a Total Maximum Daily Load (TMDL) or other strategy to reduce the input of the specific pollutant(s). The New York State Section 303(d) List of Impaired TMDL Waters identifies those waters that do not support appropriate uses and details the type, cause/pollutant, source, and class of impairment.⁶²

⁶¹ U.S. Clean Water Act of 1972, 33 U.S.C. 1251 et seq. (2002). Retrieved from <<http://epw.senate.gov/water.pdf>>

⁶² The most recent list is the Final New York State 2010 Section 303(d) List which was approved in June 2010. The list can be accessed on the New York State Department of Environmental Conservation (NYSDEC) website. The FINAL New York State 2010 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy, <http://www.dec.ny.gov/docs/water_pdf/303dlistfinal10.pdf>

Section 402 of the Clean Water Act also established the National Pollutant Discharge Elimination System (NPDES) permit program. Under this program, the U.S. Environmental Protection Agency (U.S. EPA) has regulatory authority over point source discharges on a sector-wide basis to protect water quality of the receiving waters and can designate permitting authority to the states. Point sources are discrete conveyances such as pipes or man-made ditches.

Article 17 of the New York State Environmental Conservation Law (ECL) entitled "Water Pollution Control" was enacted to protect water resources and authorized creation of the State Pollutant Discharge Elimination System (SPDES) program.⁶³ The program is designed to eliminate the pollution of New York waters and to maintain the highest quality of water possible.

The New York State Department of Environmental Conservation (NYSDEC) also sets water quality standards for surface waters as part of its Protection of Waters Regulatory Program (Environmental Conservation Law, Article 15). All waters of the state are provided a class and standard designation that denotes their existing or best uses for freshwaters (classes A, B, C, and D) and saline or marine waters (classes SA, SB, SC, I, and SD).⁶⁴ In general, these rankings are assigned as follows:

- The classification AA or A is assigned to waters used as a source of drinking water.
- Classification B indicates a best usage for swimming and other contact recreation, but not for drinking water.
- Classification C is for waters supporting fisheries and suitable for non - contact activities.
- The lowest classification and standard is D.

Additional classifications of "T" or "TS" denotes if a water body has sufficient amounts of dissolved oxygen to support trout and trout spawning. The letter classifications and their best uses are described in Exhibit G-5 in Appendix G.6.

Protected streams are streams and small water bodies along streams that are designated as C(T) (trout supporting waters) or higher (i.e., C(TS), B, or A) and are subject to the stream protection provisions of the NYSDEC Protection of Waters regulations. New York City also implements a Long-term Watershed Protection program under the ECL, Article 15.⁶⁵

In addition to the above regulations, the New York State Department of Transportation (NYSDOT) Environmental Manual (TEM), Chapter 4 Water and Ecology, provides guidance for NYSDOT's procedures regarding water and water quality for NYSDOT transportation projects.⁶⁶

4.6.2. Methodology

Surface water crossings of all alternatives were identified using existing mapping collected from federal and state agencies. Geographic Information System (GIS) data and other available

⁶³ New York ECL – Article 17, Title 8 – "State Pollutant Discharge Elimination System," Accessed September 15, 2011, <<http://www.dec.ny.gov/permits/6308.html>>

⁶⁴ NYSDEC, ECL §3-0301 and §24-1301, Chapter X-Division of Water, Part 701 "Classifications-Surface Waters and Groundwaters." Accessed April 18, 2011. <<http://www.dec.ny.gov/regs/4592.html>>

⁶⁵ NYSDEC, "Protection of Waters Program," ECL, Article 15, Implementing Regulations, 6 NYCRR PART 608. Accessed September 15, 2011. <<http://www.dec.ny.gov/permits/6042.html>>

⁶⁶ NYSDOT, Environmental Procedures Manual, Chapter 4-"Water and Ecology," Accessed September 15, 2011 <<https://www.dot.ny.gov/divisions/engineering/environmental-analysis/manuals-and-guidance/epm/chapter-4>>

information were compiled from the United States Geological Survey, the New York State GIS Clearinghouse, and the New York State Department of Environmental Conservation. Data sets used included NYSGIS hydrography, NYSDEC water quality classifications, and NYSDEC water inventory/priority waterbodies (impaired waters) list. Crossings were listed by approximate milepost for each alternative (Appendix G.6). Alternative improvements based on mileposts were then used to tally the total potential crossings of surface waters for each alternative.

4.6.3. Existing Conditions

Overview

Watersheds

New York State consists of 17 major drainage basins.⁶⁷ The six basins located in the water resources study area of the Empire Corridor are the Lower Hudson River Basin, Mohawk River Basin, Oswego/Finger Lakes Basin, Lake Ontario Tributaries Basin, Genesee River Basin, and the Niagara River/Lake Erie Basin. Exhibit 4-10 presents the percentages and areas of each of these watersheds within the 90/110 and 125 Study Areas.

Exhibit 4-10—Watersheds in the 90/110 and 125 Study Areas

Watershed Name	Percentage of 90/110 Study Area	Percentage of 125 Study Area
Lower Hudson River	32% (17.06 square miles)	37% (18.82 square miles)
Mohawk River	22% (11.37 square miles)	17% (8.52 square miles)
Oswego River/Finger Lakes	23% (12.03 square miles)	21% (10.62 square miles)
Lake Ontario and Minor Tributaries	3% (1.57 square miles)	7% (3.56 square miles)
Genesee River	6% (3.46 square miles)	6% (3.17 square miles)
Niagara River/Lake Erie	14% (7.28 square miles)	12% (6.37 square miles)

New York State Canal System

The 294-mile section of Empire Corridor West/Niagara Branch (90/110 Study Area) between Albany (Albany County) and Niagara Falls (Niagara County) crosses, closely adjoins, or follows the New York State Canal System in a number of locations.

The Erie Canal was originally constructed in the early 1800's to transport goods from Lake Erie to the Hudson River. This system was constructed and enlarged over time to accommodate larger barges, with the most recent improvements made in the early 1900's. The modern-day New York State Canal System links the Hudson River, the Finger Lakes, Lake Champlain, Lake Ontario, and the Niagara River with communities throughout the state. Four canals make up the New York State Canal System (formerly called the New York State Barge Canal):

- The **Erie Canal** (the main canal between Hudson River and Lake Erie/Niagara River that flows through Oneida Lake and Onondaga Lake),

⁶⁷ NYSDEC, *Watersheds, Lakes, Rivers*. Accessed April 18, 2011. <<http://www.dec.ny.gov/lands/26561.html>>

- The **Champlain Canal** (which follows and then extends north from the Hudson River to Lake Champlain on the New York-Vermont border),
- The **Cayuga-Seneca Canal** (which extends south to Cayuga Lake and Seneca Lake), and
- The **Oswego Canal** (a branch extending north of the Erie Canal north of Syracuse to Lake Ontario).

The railroad crosses the Erie Canal several times along the Empire Corridor West. The easternmost crossing occurs west of the Schenectady Station (MP 160). The canal system crosses the railroad for the final time in the Town of Tonawanda (MP QDN13.5).

Remnants of the Old (historic) Erie Canal remain in portions of the study area in Madison and Onondaga Counties. The Old Erie Canal parallels the tracks through the eastern half of Madison County, before crossing the railroad at MP 272 and crosses the railroad again in Onondaga County at MPs 302.5 to 303.

Surface Waterway Crossings

The 464-mile section of the existing Empire Corridor (90/110 Study Area) crosses a total of 287 tributaries and waterways along its length, including the Harlem River, Hudson River, Mohawk River, Erie Canal, Genesee River, and Seneca River and tributaries to these rivers. The 450-mile 125 Study Area crosses a total of 378 tributaries and waterways. Of these crossings, 105-106 are located along Empire Corridor South, south of and including Rensselaer County to Manhattan.

Exhibit 4-11 shows the number of waterbodies crossed in each county for both corridors and the number that are considered to be an impaired/priority waterway (under Section 303(d) of the U.S. Clean Water Act) and those that are classified as protected streams (designated as C(T) (trout supporting waters) or higher (i.e., C(TS), B, or A) under the NYSDEC Protection of Waters regulations. There are a total of 248 impaired/priority waterways along the 90/110 Study Area, compared to 319 impaired/priority waterways along the 125 Study Area. Of these, 74 to 75 are along Empire Corridor South. There are 125 protected waters along the 90/110 Study Area, and 131 protected waters along the 125 Study Area. Of these, 77 are along the Empire Corridor South.

Exhibits G-6, G-7, and G-8 in Appendix G.6 presents a detailed listing of the waterways crossed in each county and their classification as an impaired/priority waterway or as a protected waterway. These exhibits also list the 303(d) segments impaired by pollutants related to construction, as specified in the NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity, and pollutants of concern for municipal separate storm sewer systems (MS4s), as specified in the SPDES General Permit for Stormwater Discharges from MS4s. The watersheds and waterbodies crossed and their classifications (as impaired priority water or protected water) in each county for each program corridor are described in detail in Appendix G.6.

4.6.4. Environmental Consequences

Comparison of Alternatives

Proposed activities that would have a higher potential to directly impact existing surface water resources may include the construction of new tracks immediately adjacent or over waterways, bridge construction and/or culvert improvements, rock slope stabilization adjacent to waterways, and embankment improvements.

In general, actions that would constitute direct impacts include the destruction or alteration of all or part of the surface water through diversion, channelization, embankments construction, dredging, filling, or other direct modifications of the waterway. In addition, direct impacts include the deterioration of the surface water quality through the direct discharge of pollutants and/or sediment to the waterway during construction (i.e., releases from equipment, sediment runoff) and/or operational activities (i.e., increased train traffic could generate additional surface and air particulates, which could settle in surface waters). Potential long-term impacts on surface waters include permanent reduction of aquatic habitats and potential reduction in surface waters available for recreation. Short-term impacts on surface waters, such as adverse short-term impacts on water

Exhibit 4-11—Empire Corridor Surface Waterway Crossings in the Study Area

County	Number of Surface Waterway Crossings		Number of Impaired (303d)/ Priority Water		Number of Protected Waters	
	90/110 Study Area	125 Study Area	90/110 Study Area	125 Study Area	90/110 Study Area	125 Study Area
New York	1	1	1	1	0	0
Bronx	0	0	0	0	0	0
Westchester	23	23	11	11	18	18
Putnam	12	12	9	9	11	11
Dutchess	38	38	28	28	34	34
Columbia	22	22	19	19	14	14
Rensselaer	10	9	7	6	0	0
Albany	4	3	3	2	2	2
Schenectady	9	18	9	15	2	3
Schoharie	0	9	0	9	0	0
Montgomery	35	21	35	21	10	1
Herkimer	19	39	19	37	4	15
Oneida	12	18	12	18	4	7
Madison	11	20	11	20	4	5
Onondaga	16	20	13	15	4	5
Cayuga	5	15	5	12	0	1
Wayne	18	43	18	42	5	3
Monroe	19	23	18	18	6	9
Genesee	17	25	16	22	4	1
Erie	7	10	6	6	3	2
Niagara	9	9	8	8	0	0
TOTAL	287	378	248	319	125	131
Note: The 90/110 Study Area is used for analysis of Alternatives 90A, 90B, and 110 and consists of the existing 464-mile long Empire Corridor alignment. The 125 Study Area is used for analysis of Alternative 125 and consists of portions of the existing Empire Corridor and new alignment and is 450 miles long. The study area width is defined as being within 300 feet of the program centerline.						

Source: NY GIS Clearinghouse, 2011; NYSDEC GIS Data, 2011

quality, can temporarily disturb aquatic wildlife and vegetation and can adversely effect aquatic species.

The Base Alternative and Alternative 90A would have the least impacts to surface waters because of fewer proposed improvement areas occurring over, or adjacent to, waterways, with Alternative 90A potentially affecting 107 crossings. In addition, these alternatives would involve work largely within the right-of-way, with tracks added in the location of the former track beds or existing access roads.

Alternative 90B, the Preferred Alternative, and Alternative 110, with 218 to 219 crossings, would have greater potential to impact surface waters and water quality in more locations than the Base Alternative or Alternative 90A, especially where new third and fourth track construction would occur over, or adjacent to, waterways. Although the number of waterway crossings for Alternatives 90B and 110 are similar, Alternative 110 would be located 15 feet further from the existing railroad (for a total of 30 feet of separation) and would generally involve more construction to add or modify existing crossing structures (bridges or culverts) than Alternative 90B.

Alternative 125 would involve the greatest impacts to surface waters and water quality, potentially affecting 361 surface waters, as it extends primarily on new alignment throughout the Empire Corridor West.

The sections below identify the areas where the Preferred Alternative or new track will be constructed in, or adjacent to, surface waters. There would be potential impacts, as described above, at all crossings; however, the specifics of impacts will be documented as part of the Tier 2 analysis. Appendix G.6 addresses the potential impacts of the other alternatives considered, and the following section addresses potential effects of the Preferred Alternative.

Alternative 90B (Preferred Alternative)

Improvements from Alternative 90B would involve approximately 219 surface water crossings, including those proposed for Alternative 90A. Direct impacts would generally occur in areas where the surface water underlies, or is located immediately adjacent to the proposed track activities. Proposed activities that would have a higher potential to directly impact existing surface water resources may include the construction of new tracks immediately adjacent or over waterways, bridge construction and/or culvert improvements, rock slope stabilization adjacent to waterways, and embankment improvements. In general, actions that would constitute direct impacts include the destruction or alteration of all or part of the surface water through diversion, channelization, embankments construction, dredging, filling, or other direct modifications of the waterway. In addition, direct impacts include the deterioration of the surface water quality through the direct discharge of pollutants and/or sediment to the waterway during construction (i.e., releases from equipment, sediment runoff) and/or operational activities (i.e., increased train traffic could generate additional surface and air particulates, which could settle in surface waters). The potential for impacts to these waterway crossings are not yet fully known in Tier 1.

Empire Corridor South

The impacts of the Preferred Alternative include impacts from the following Alternative 90A projects along Empire Corridor South. Alternative 90B improvements along Empire Corridor South would involve 47 waterway crossings. This work includes four miles of second track through urbanized areas of Manhattan (MPs 9 to 13), and 1.4 miles (MPs 23.8 to 25.2) of new track, extending under the Tappan Zee Bridge, for the Tarrytown Pocket Track/Interlocking. Both projects would occur over waterways associated with the tributaries of the Hudson River, including the Harlem River at MP 10.

In addition, the rail line would be located directly adjacent to the Hudson River in these improvement areas. Depending on design, these improvements could have the potential to impact surface waters and water quality.

With the Preferred Alternative, there would be signal improvements proposed along 43 miles (MPs 32.8 and 75.8). In addition, along this section there would be 10 miles of new third track (MPs 53 to 63) and there would be improvements at the Poughkeepsie Yard/Storage Facility (MPs 71 to 75.8). North of Poughkeepsie and south of Albany-Rensselaer Station (MPs 75.8 to 140), proposed improvements would also include rock slope stabilization (MPs 105 to 130) and three new control points (CP 82, CP 99, and CP 136), as well as station improvements at Rhinecliff Station (high-level platforms) and Hudson Station (new Ferry Street Bridge and track realignments). In addition, the rail line would be located directly adjacent to the Hudson River in these improvement areas. Impacts to surface waters and water quality would be more likely in areas where there would be new track construction.

Empire Corridor West/Niagara Branch

Alternative 90B, the Preferred Alternative, would include the following Alternative 90A improvements.

- Replacement of the Livingston Avenue Bridge would pass over the Hudson River at the Rensselaer/Albany County Line; therefore, work on this bridge could have the potential to impact surface water and water quality associated with the Hudson River.
- With Alternative 90B, track improvements would include 10 miles of third track between MPs 169 and 179, and Amsterdam Station improvements. This entire 10-mile segment would closely adjoin the banks of the Mohawk River and would cross approximately nine waterways. Although impacts in these areas could be contained within the current right-of-way, there would still be potential for minimal impact of surface waters and water quality.
- West of MP 175, work extending to MP 295 would consist of upgrading interlockings, automatic block signals, and control points. Alternative 90B would also include Syracuse Station track improvements (MPs 290 to 294) within this improvement segment. The alignment would continue to closely adjoin the banks of the Mohawk River and Erie Canal through MP 253. In addition to the above crossings, the alignment would cross approximately 27 waterways between MPs 175 and 295. Although work would consist of upgrading signals, control points and interlocking, and this work would be performed within the current right-of-way, it could minimally impact surface waters and water quality within improvement areas.
- Alternative 90B would include third track improvements along nine miles (MPs 373 to 382) west of Rochester station and the addition of a third track along 11 miles (MPs 382 to 393) in western Monroe and eastern Genesee Counties. Together, these improvements could impact approximately 16 streams.
- The proposed double track (MPs QDN17 to QDN23.2) and Niagara Falls track improvements (MPs QDN25 to QDN28) could have the potential to impact surface waters and water quality associated with seven waterway crossings.

Third and fourth track improvements for Alternative 90B would start at MP 160 in the City of Schenectady, and extend west to MP 430, east of Buffalo and would have the potential to impact surface waters and water quality associated with approximately 164 waterways. Depending on design, there would be potential to directly or indirectly impact these surface water features and their water quality from the construction of new track, and increased train traffic. The addition of

new tracks could potentially affect waterway crossings if there is a need to extend existing culverts, bridges, or railbed. The additional railbed and trains could result in an incremental increase in stormwater runoff from these operations into adjoining waterways.

- In Schenectady County, additional track and improvements to the Schenectady Station included in Alternative 90B would cross approximately eight waterways. The Mohawk River, which would cross the alignment at MP 160, would closely adjoin the rail line from approximately MP 166 to the county line (MP 169.5).
- The railroad would continue to adjoin the north bank of the Mohawk River/Erie Canal through all of Montgomery County, largely remaining within 50 to 1,000 feet of the river/canal. In addition, there would be approximately 35 waterway crossings, primarily over tributaries of the Mohawk River.
- The railroad would continue to adjoin the north bank of the Mohawk River/Erie Canal through all of Herkimer County. In addition, there would be approximately 19 waterway crossings, primarily over tributaries of the Mohawk River.
- Alternative 90B would extend through Oneida County, paralleling the Erie Canal/Mohawk River between Utica and Rome before diverging west to flow into Oneida Lake. New track would cross approximately 12 waterways in this county.
- In Madison County, Alternative 90B new track would cross 11 waterways.
- There would be 16 waterway crossings that the proposed new track of Alternative 90B would traverse in Onondaga County.
- In Cayuga County, Alternative 90B new track would cross approximately five major waterways.
- There would be approximately 18 water crossings in Wayne County.
- New track proposed with Alternative 90B would cross 19 waterway crossings in Monroe County.
- Alternative 90B would cross approximately 17 waterways in Genesee County.
- Alternative 90B third track improvements would cross three surface waters including Ellicott Creek (MP 422.5) in Erie County.
- The double track along the Niagara Branch between MPs QDN 2 and 7 would extend in proximity to the waterfront along Lake Erie and the Black Rock Canal along the Niagara River and would cross Scajaquada Creek.

4.6.5. Potential Mitigation Strategies

The Tier 1 design of the program alternatives has already incorporated minimization to some extent through use of retaining walls, such as adjacent to proposed flyovers, and track realignments to minimize encroachment on adjoining streams and properties. In the Tier 2 assessment, NYSDOT will also further evaluate and identify means of avoiding and minimizing waterway impacts through shifts in location of tracks and other facilities and use of design measures such as retaining walls or steeper slopes. Other potential mitigation to be considered will include permanent Best Management Practices (BMPs), such as stormwater treatment or detention/retention facilities or drainage channels/facilities where appropriate to improve stormwater management/flow and water quality.

The relevant permits and regulatory approvals from federal and state agencies for work in waterways will be obtained, and work will be conducted in conformance with applicable regulatory guidelines and standards. Pursuant to Section 402 of the Clean Water Act (CWA), stormwater

discharges from certain construction activities are unlawful unless they are authorized by a National Pollutant Discharge Elimination System (NPDES) permit or by a state permit program. New York's SPDES is a NPDES-approved program with permits issued in accordance with the Environmental Conservation Law (ECL). This general permit is issued pursuant to Article 17, Titles 7, 8 and Article 70 of the ECL. In accordance with the NYSDEC State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity (Permit No. GP-0-20-001, effective January 29, 2020), construction projects that disturb more than an acre of land and that involve a stormwater discharge to surface waters of the United States, either indirectly through stormwater sewers or directly to waterways, must prepare Stormwater Pollution Prevention Plans (SWPPPs). This plan will also meet the requirements set forth by the New York City Department of Environmental Protection (NYCDEP).

All NYSDOT projects that fall below SPDES thresholds are required to prepare erosion and sediment control plans. Application of BMPs identified in the SWPPPs or Erosion and Sediment Control (ESC) Plans will reduce the amount of erosion and sedimentation resulting from construction activities. Temporary and permanent construction BMPs, such as seed, mulch, embankment protectors, grade techniques, inlet protection, silt fences, development of a Spill Prevention Control Plan (SPCC), Stormwater Management Plans (SWMPs) and vehicle tracking prevention will be used as appropriate. The design of permanent and temporary BMPs to improve the quality of stormwater runoff will be developed and designed in accordance with NYSDOT and NYSDEC criteria.

4.6.6. Future Analysis

During the Tier 2 assessments, program impact assessment based on design of the Preferred Alternative, Alternative 90B, and site-specific mapping will occur to better define the extent of work and type of activities potentially affecting surface waters. The locations of protected streams and impaired (303(d))/priority waters that may require special consideration will also be better defined and mapped, particularly for those waterways impaired by pollutants related to construction or pollutants of concern for MS4s, as identified in the SPDES general permits.

An owner or operator may obtain coverage under the NPDES/SPDES general permit by submitting a Notice of Intent (NOI) to the NYSDEC. Therefore, during the Tier 2 design and assessment, the SPDES permitting requirements will be reviewed with respect to the proposed activities, in coordination with NYSDEC and the U.S. EPA.

If required, a joint permit application with the U.S. Army Corps of Engineers (U.S. ACE) and NYSDEC will be prepared and filed to obtain Section 10 (U.S. Rivers and Harbors Act) and Section 401 Water Quality Certification and Section 404 Wetland Permit (U.S. Clean Water Act) and a NYS Protection of Waters permit. The NYSDEC/NYSDEC Memorandum of Understanding (MOU) could apply to this program relative to ECL Article 15 (Protection of Waters); the MOU states that NYSDOT does not need to obtain an individual Protection of Waters Permit, provided that NYSDOT conducts its environmental screening and NYSDEC consultation in accordance with the MOU.

4.7. Wild, Scenic, and Recreational Rivers

4.7.1. Regulatory Context

The National Wild and Scenic Rivers System was created by Congress in 1968 to preserve certain rivers with outstanding natural, cultural, and recreational values in a free-flowing condition for the

enjoyment of present and future generations.⁶⁸ Rivers may be designated by Congress or, if certain requirements are met, the Secretary of the Interior. Each river is administered by either a federal or state agency. Designated segments need not include the entire river and may include tributaries. For federally administered rivers, the designated boundaries generally average one-quarter mile on either bank in the lower 48 states.

Rivers are classified as wild, scenic, or recreational as described below.

- **Wild river areas:** Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.
- **Scenic river areas:** Those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.
- **Recreational river areas:** Those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.

The National Park Service (NPS) also publishes a Nationwide Rivers Inventory (NRI) list. The NRI list consists of some 2,400 miles of Inventory Rivers in New York State that are potentially-eligible for inclusion in the National System and would also require a permit if impacted by a project. Under a 1979 Presidential Directive, and related Council on Environmental Quality (CEQ) procedures, all federal agencies must seek to avoid or mitigate actions that would adversely affect one or more NRI segments.⁶⁹

In addition to the federal regulations above, the New York State Wild, Scenic and Recreational Rivers Act protects those rivers of the state that possess outstanding scenic, ecological, recreational, historic, and scientific values.

4.7.2. Methodology

National and State Wild, Scenic and Recreational rivers for study areas within 300 feet of the centerline for all alternatives were identified using existing mapping collected from federal and state agencies. National Wild and Scenic Rivers were identified using Geographic Information System (GIS) data provided by the U.S. Forest Service. The river segments listed on the Nationwide Rivers Inventory were compared to the list of waterways developed based on existing surface water mapping to identify the potential for impacts, which would be further researched as part of Tier 2. Existing surface water mapping was compared to the list of state-designated segments to identify state Wild, Scenic, and Recreational Rivers.⁷⁰

4.7.3. Existing Conditions

Empire Corridor South

There are no mapped National Wild or Scenic Rivers in the Empire Corridor South segment.

⁶⁸ Wild and Scenic Rivers Act (16 U.S.C. 1271-1287) -- Public Law 90-542, approved October 2, 1968, (82 Stat. 906)

⁶⁹ National Park Service, 2011. "National Center for Recreation and Conservation, Nationwide Rivers Inventory," <<http://www.nps.gov/ncrc/programs/rtca/nri/index.html>>, website accessed February 2012.

⁷⁰ NYSDEC, "Wild, Scenic, and Recreational Rivers." Accessed October 3, 2011. <<http://www.dec.ny.gov/lands/32739.html>>

However, three segments of the Hudson River are listed on the Nationwide Rivers Inventory. The southernmost listed segment in Columbia, Dutchess, and Ulster Counties extends five miles north of Barrytown (near MP 95) to south of Malden-on-Hudson. There are two listed segments in Greene and Columbia Counties: a 4-mile segment extending north of Hudson (near MP 114.5) to south of Cossackie and a 5-mile segment extending north of Cossackie Island to above New Baltimore (near MP 128).

Empire Corridor West/Niagara Branch

There are no mapped National Wild or Scenic Rivers in the Empire Corridor West segment. However, there are two segments listed on the Nationwide Rivers Inventory: an 8-mile section of the Mohawk River in Oneida that terminates to the north near the Empire Corridor (near MP 250) in Stanwix and the Black Creek (MP 386) that crosses the Empire Corridor in Monroe County and Genesee County (MP 396.5).

4.7.4. Environmental Consequences

Comparison of Alternatives

No currently-designated National or State Wild, Scenic or Recreational Rivers were identified in the program study area. Therefore, none of the alternatives would have the potential to impact known designated National or State Wild, Scenic or Recreational Rivers.

Alternative 90B (Preferred Alternative)

The program will not impact designated National or State Wild, Scenic or Recreational Rivers.

However, the program has potential to impact some waterways listed on the Nationwide Rivers Inventory (NRI); namely: Black Creek (in Monroe County), Mohawk River (near Rome) and three segments of the Hudson River (in Dutchess, Ulster, Columbia, and Green counties). The Black Creek crosses the Empire Corridor at MP 386, near the location of 11 miles of proposed third track.

No direct or indirect impacts to the Hudson or Mohawk River segments are anticipated.

4.7.5. Potential Mitigation Strategies

Permitting will be performed to comply with all applicable regulatory requirements. Since there would be no anticipated impacts to designated National or State Wild, Scenic or Recreational Rivers, mitigation is not anticipated at this time. However, as discussed in the following section, additional research will be performed regarding potential impacts on the rivers listed on the Nationwide Rivers Inventory, and appropriate mitigation measures will be identified in Tier 2.

4.7.6. Future Analysis

There are three lists that will need to be reviewed again during the Tier 2 analysis for any change in status to National or State Wild, Scenic or Recreational Rivers: the National Wild and Scenic Rivers list, the state list published by NYSDEC and the National Park Service (NPS) NRI.

If work is proposed that could alter or affect a river on the Nationwide Rivers Inventory, the following steps may be required in the Tier 2 assessment:

- Determine whether the proposed action could affect an Inventory river and identify and analyze the environmental effects of their actions, including whether the proposed action could have an adverse effect on the natural, cultural and recreational values of the Inventory river segment;
- Consult with agencies with jurisdiction by law or special expertise (in this case, the National Park Service (NPS));
- Develop and study alternatives;
- Determine whether the proposed action could foreclose options to classify any portion of the Inventory segment as wild, scenic, or recreation river areas; and
- Incorporate avoidance/mitigation measures into the proposed action to maximum extent feasible within the agency's authority and use all practicable means and measures to preserve important historic, cultural, and natural aspects of our national heritage.

4.8. Navigable Waters

4.8.1. Regulatory Context

The U.S. Rivers and Harbors Act established federal jurisdiction over navigable waters. Section 10 of the U.S. Rivers and Harbors Act grants the U.S. ACE regulatory authority over work in, over, or under navigable waters, including wharfs, piers, and structures (excluding bridges and structures permitted by the USCG), and work such as dredging or disposal of dredged material, or excavation, filling, or other modifications to navigable waters.⁷¹

Under the state definition, navigable waters include lakes, rivers and other waterways and water bodies on which water vessels with a capacity of one or more persons are operated or can be operated.⁷² Regulations do not require that NYSDOT obtain Article 15 Protection of Waters permits, but do require that NYSDOT coordinate activities regulated by Article 15 with NYSDEC as per the “Memorandum of Understanding Between the New York State Department of Transportation and the New York State Department of Environmental Conservation Regarding ECL Articles 15 and 24.” The MOU states that NYSDOT does not need to obtain an individual Protection of Waters Permit, provided that NYSDOT conducts its environmental screening and NYSDEC consultation in accordance with the MOU.

Under state law, New York State also owns the land beneath large rivers and lakes, and the underwater holdings are managed by the New York State Office of General Services. Work within underwater lands may require approvals or easements for their use. In addition, the New York State Canal Corporation manages lands under and along the states canals and canalized rivers, including the Erie Canal, and has regulatory jurisdiction over activities in and along these waterways.

4.8.2. Methodology

Various sources were used to identify navigable waters under federal jurisdiction crossed by or within 300 feet of the centerline of Program alternatives, including a published list of from the U.S.

⁷¹ Section 10 of The Rivers and Harbors Appropriation Act of 1899 (33 U.S.C. 403; Chapter 425, March 3, 1899; 30 Stat. 1151).

⁷² NYSDEC, “Excavation or Placement of Fill in Navigable Waters.” Accessed September 29, 2011.
< <http://www.dec.ny.gov/permits/6548.html>>.

ACE.⁷³ In addition, the U.S. Coast Guard was consulted with regards to existing bridge permits over navigable waters within the study area. The U.S. Coast Guard, First Coast Guard District, in correspondence dated July 7, 2011, provided copies of bridge permits for five bridges along the Empire Corridor South, and the published list of navigable waterways for the Ninth (Buffalo) Coast Guard District was also consulted.⁷⁴

4.8.3. Existing Conditions

Federally regulated navigable waterways are defined as waters subject to ebb and flow of the tide and that provide a channel for interstate commerce and transportation of people and goods.⁷⁵ The Empire Corridor extends through New York State crosses or parallels numerous waterways considered navigable by the U.S. ACE or U.S. Coast Guard. Exhibit 4-12 lists the navigable waters within the 600-foot wide study area identified from published lists and bridge permits provided by the USCG, and Appendix G.7 describes navigable waterways in each program segment.

Along the 90/110 Study area, the rail corridor crosses 19 navigable waterways, and along the 125 Study Area, the rail corridor would cross 12 navigable waterways. In many cases, these crossings are of the same waterbody, for instance, there are multiple crossings of the Erie Canal. In other instances, the rail corridor closely parallels navigable waterways, without crossing (such as the Hudson River along many segments of Empire Corridor South or the Erie Canal along portions of Empire Corridor West).

4.8.4. Environmental Consequences

Comparison of Alternatives

All alternatives have the potential to impact navigable waters as a result of construction in and around navigable waters, with the potential for discharges and stormwater runoff to affect surface water quality. Long-term impacts could include excavation and placement of permanent fill for bridge piers and abutments and installation of spans over the waterway, or riprap below. Short-term impacts, such as construction of access roads, staging for pier construction, or placement of spans, could involve temporary sedimentation or placement of fill or structures. Placement of permanent or temporary spans and piers/pilings could affect navigational clearances and access for marine traffic on either a long-term or temporary basis.

The Base Alternative and Alternative 90A have the least potential to impact navigable waters, with the potential to modify between two to five crossings over navigable waters. Alternative 125 has the potential to impact the navigable waters at four new crossings. Alternative 90B, the Preferred Alternative, and Alternative 110 would cross a greater number of navigable waterways. For Alternatives 90B and 110, 15 existing crossings over navigable waters could be modified with potential for impacts. Alternative 110 would involve track construction located 15 feet further from the existing track than Alternative 90B, and therefore would be expected to involve greater construction at navigable waterway crossings.

⁷³ U.S. Army Corps of Engineers. "Navigable Waterways in Buffalo District Where Department of the Army Permits are Required, State of New York State." Accessed September 9, 2011. <http://www.lrb.usace.army.mil/regulatory/waterway_ny.pdf>.

⁷⁴ U.S. Coast Guard. "Ninth Coast Guard District Federally Navigable Waters by State," updated March 2010. Accessed September 9, 2011. <http://www.uscg.mil/d9/D9Legal/water/new_york.pdf>.

⁷⁵ Definition of waters of the U.S. (as defined in 33 CFR 329.4 and 40 CFR 230.3)

Exhibit 4-12—Navigable Waters in the Study Area

County	River/Stream Crossing (Appx. Milepost) ¹	Name	River/Stream Crossing (Appx. Milepost) ¹	Name
	90/110 Study Area		125 Study Area	
New York	10	Harlem River (Spuyten Duyvil Railroad Bridge) Hudson River	10	Harlem River (Spuyten Duyvil Railroad Bridge) Hudson River
Bronx		Hudson River		Hudson River
Westchester	32.5-33 42	Croton Bay (Metro-North Railroad Bridge) Peekskill Bay (Metro-North Railroad Bridge) Hudson River	32.5-33 42	Croton Bay (Metro-North Railroad Bridge) Peekskill Bay (Metro-North Railroad Bridge) Hudson River
Putnam		Hudson River		Hudson River
Dutchess	65	Wappinger Creek (New Hamburg Railroad Bridge) Hudson River	65	Wappinger Creek (New Hamburg Railroad Bridge) Hudson River
Columbia		Hudson River		Hudson River
Rensselaer		Hudson River		Hudson River
Albany	143	Hudson River (Livingston Avenue Railroad Bridge)	QH143.5	Hudson River
Schenectady	160	Mohawk River/ Erie Canal	None	NA
Schoharie	NA	NA	None	NA
Montgomery		Mohawk River/Erie Canal	None	NA
Herkimer	230-231.5 234	Mohawk River/Erie Canal Erie Canal Mohawk River	None	NA
Oneida	248.5	Mohawk River Erie Canal	None	NA
Madison	None	NA	None	NA
Onondaga	292	Erie Canal Onondaga Lake	QH278.5	Erie Canal Onondaga Lake
Cayuga	None	NA	None	NA
Wayne	328-330 335, 339.5	Clyde River/Erie Canal Erie Canal	None	NA
Monroe	371.5 374.5	Genesee River Erie Canal	QH356.75 QH359	Genesee River Erie Canal
Genesee	None	NA	None	NA
Erie	422.5, QDN12.5 QDN6	Ellicott Creek Lake Erie Scajaquada Creek	QH411.5 QDN12.5 QDN6	Ellicott Creek Ellicott Creek Lake Erie Scajaquada Creek
Niagara	QDN13.5	Tonawanda Creek/Erie Canal	QDN13.5	Tonawanda Creek/Erie Canal

Notes:

1 Milepost shown if stream/water body crosses the railroad. If not shown, water bodies are within the 300-foot buffer, but do not cross the railroad.
NA Not Applicable.

The 90/110 Study Area is used for analysis of Alternatives 90A, 90B, and 110 and consists of the existing 464-mile long Empire Corridor alignment. The 125 Study Area is used for analysis of Alternative 125 and consists of portions of the existing Empire Corridor and new alignment and is 450 miles long. The study area width is defined as being within 300 feet of the corridor centerline.

Source: U.S. Army Corps of Engineers, 2011; U.S. Coast Guard, 2011

The sections below identify the areas where the Preferred Alternative's improvements and or new track will be constructed over navigable waters. There would be potential impacts, as described above, at all crossings; however, the specifics of impacts will be documented as part of the Tier 2 analysis.

Alternative 90B (Preferred Alternative)

Because the exact nature and extent of impacts on the navigable waters in the vicinity of the program are not yet known, this Tier 1 level assessment identified the potential for both long-term and construction impacts by identifying those areas where the program extends within 300 feet of navigable waters. These areas are described below.

Empire Corridor South

The impacts of the Preferred Alternative include impacts from the following Alternative 90A projects.

- The addition of a second track over the Harlem River at the Spuyten-Duyvil Railroad Bridge (MP 10) could have waterway impacts. The alignment in these improvement areas would also closely adjoin the Hudson River; however, work would likely remain within the existing right-of-way and would be unlikely to impact the Hudson River waterway.
- With the Preferred Alternative, signal improvements proposed along 43 miles (MPs 32.8 to 75.8) would cross the Hudson River at two U.S. Coast Guard permitted bridges: one over Croton Bay (MPs 32.5 to 33) and the other over Peekskill Bay (MP 42). Even though work on the bridges would be minimal and likely contained within the existing right-of-way, it could have waterway impacts. In addition, the alignment in these improvement areas also closely adjoins the Hudson River; however, work would likely remain within the existing right-of-way and would be unlikely to impact the Hudson River waterway.
- Alternative 90B also includes replacement of the Livingston Avenue Bridge, which would pass over the Hudson River and will need to be permitted by the U.S. Coast Guard. Improvements and replacement activities could result in permanent and temporary waterway impacts, depending on the design.

Empire Corridor West/Niagara Branch

The impacts of the Preferred Alternative include impacts from the following Alternative 90A projects.

- Syracuse track improvements including upgrade of interlockings, automatic block signals, and control points and track improvements at the Syracuse Station (MPs 290 to 294) would involve the crossing of the Erie Canal and could also result in permanent and temporary impacts.
- Rochester third track improvements along nine miles (MPs 373 to 382), west of the Rochester Station, would involve a crossing of the Erie Canal (MP 374.5). Improvements and construction activities at this crossing could result in permanent and temporary waterway impacts.

Third and fourth track improvements for Alternative 90B would start at MP 160 in the City of Schenectady, and extend west to MP 430, east of Buffalo. Third track improvements would include the crossing of five navigable waters at 11 crossings. Areas of fourth track improvements would not cross navigable waters.

- Third track improvements over the Mohawk River would occur in three counties: Schenectady (MP 160), Herkimer (MP 234), and Oneida (MP 248.5), and could result in permanent and temporary impacts. Third track improvements over the Erie Canal would also occur in three

counties: Herkimer (MPs 231.5), Wayne (MPs 328 to 330, 335, 339.5), and Monroe (MP 374.5), and could also result in permanent and temporary impacts.

- Alternative 90B would also have third track improvements at crossings of the Erie Canal in Syracuse (MP 292), the Genesee River in Rochester (MP 371.5) and Ellicott Creek, just east of Buffalo-Depew (MP 422.2). Improvements at these three crossings could result in permanent and temporary impacts.

There would also be locations where relocations of adjoining roadways may result in impacts to navigable waters, but these specific locations would be defined in the Tier 2 analysis.

4.8.5. Potential Mitigation Strategies

Project design changes to the Preferred Alternative, Alternative 90B, to avoid or minimize impacts may include adjusting pier and riprap locations outside of the ordinary high-water mark. Project design will be refined to minimize obstructions to navigation and the need for fill and dredging activities. Program component projects may require permits, approvals, or coordination with the USCG, U.S. ACE, NYSDEC, New York State Canal Corporation, New York State Office of General Services, and local harbormasters.

In coordination with the regulatory agencies, for new or modified bridge construction, engineers will determine the need for subsurface cables and the required depth of emplacement and the requirements for removal of existing bridge footings and subsurface cables. If applicable, engineers will also determine time-of-year work restrictions for bridge construction affecting navigation in consultation with these agencies. Plans for fendering and other features affecting navigation will be developed in consultation with the agencies with jurisdiction. For new movable bridges, considerations during design may include potential for contamination from lubricants and fuels stored on the bridge and whether special measures or plans (e.g., Spill Response Plans or Environmental Operation and Maintenance Manuals) are required to prevent contamination during operation.

4.8.6. Future Analysis

During the Tier 2 analysis, further coordination will be performed to identify navigable waters in the study and issues of concern for the USCG and the U.S. ACE. For new or modified crossings of navigable waterways, information available on the location and depths of the navigation channels will be researched and obtained. Detailed cross-sections of bridges may be developed to fully understand the potential impacts to the crossings. Depending on the type and extent of improvements proposed at bridge crossings, additional research on the type and heights of navigational vessels may be required for new bridge construction, as part of a bridge type study. Research on peak navigation seasons may be required for any navigational closures. Coordination with the U.S. Coast Guard, the U.S. ACE, and NYSDEC will be completed during the design of new or rehabilitated/reconstructed bridges and development of plans for placement of any associated submarine cables and other structures within navigable waterways.

4.9. Floodplains

4.9.1. Regulatory Context

Floodplains are the lands on either side of a stream that are inundated when the capacity of the

stream channel is exceeded. The National Flood Insurance Program (NFIP) was established pursuant to the National Flood Insurance Act of 1968 (amended)⁷⁶ and the Flood Disaster Protection Act of 1973 (as amended)⁷⁷, to encourage sound floodplain management programs at the state and local levels. To provide a national standard without regional discrimination, the Federal Emergency Management Agency (FEMA) has adopted the area with 1% annual chance of flooding as the base flood for floodplain management and flood insurance purposes.

Executive Order (EO) 11988, Floodplain Management⁷⁸ (1977) directs federal agencies to *"provide leadership and take action to reduce the risk of flood loss, to minimize the impacts of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains."*⁷⁹ In addition, the U.S. DOT Order 5650.2 describes policies and procedures for *"ensuring that proper consideration is given to avoidance and mitigation of adverse floodplain impacts in agency actions, planning programs and budget requests."*⁸⁰

FRA Procedures for Considering Environmental Impacts states that each project shall determine whether any of the alternatives would affect a base floodplain. If the Preferred Alternative, Alternative 90B, would affect a base floodplain, considerations for the permitting and/or Tier 2 environmental documentation include: any risk associated with each such alternative; the impacts on natural and beneficial floodplain values; and the adequacy of the methods proposed to minimize harm.

Generally, these regulations are enforced at the local level by local governments, with assistance from the New York State Department of Environmental Conservation (NYSDEC). In New York State, local communities that participate in the NFIP regulate development in Special Flood Hazard Areas. An exception is development funded and undertaken by the state or federal government, which is regulated by the responsible agency, subject to technical assistance by the NYSDEC and FEMA. Nearly all New York communities, defined as a town, city or village, participate in the NFIP. Each participating community in the state has a designated floodplain administrator, usually the building inspector or code enforcement official.^{81,82}

4.9.2. Methodology

Flood-prone areas were identified using GIS mapping and Flood Insurance Rate Map (FIRM) panels of 100-year floodplain areas identified by FEMA for study areas within 300-feet of the corridor centerline for all alternatives. A floodplain is the area that is inundated with water during a flood. A 100-year flood is calculated to be the level of flood water that has a one percent (%) chance of being equaled or exceeded in any single year. A floodplain is composed of two parts: the floodway and the floodway fringe. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment in order that the 100-year flood is carried without increasing the

⁷⁶ National Flood Insurance Act of 1968. 42 U.S.C.4001 et seq. (1968).

⁷⁷ Flood Disaster Act of 1973 [42 U.S.C.4001 et seq.] (amended).

⁷⁸ Executive Order 11988, "Floodplain Management," President of the United States, 1977.

⁷⁹ As updated and amended by Executive Order 13690-"Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input," January 30, 2015.

⁸⁰ U.S. Department of Transportation Order 5650.2, "Floodplain Management and Protection," April 23, 1979.

⁸¹ New York State Department of Environmental Conservation. "Floodplain Construction Requirements in New York State." September 2007, Accessed April 19, 2011. <http://www.dec.ny.gov/docs/water_pdf/floodplainconstruction.pdf>

⁸² 6 New York Codes, Rules and Regulations (NYCRR) Part 502, Floodplain Management Criteria for State Projects (authority Environmental Conservation Law [ECL] section 1-0101, 3-0301 and Article 36).

water surface elevation by more than one foot. The floodway fringe is the outer portion of the floodplain beyond the floodway. Changes in the floodway such as adding fill material, constructing buildings or bridges, or limiting the natural conveyance of floodwaters can cause a rise in the 100-year water surface and can subsequently impact properties not previously affected by a 100-year storm event.

GIS mapping was obtained from NYS GIS and FEMA, and was based on FEMA Flood Insurance Rate Maps (FIRMs). Areas of 100-year floodplains within the 600-foot wide study area were calculated. GIS mapping of FEMA floodplains was not available for Wayne County, and areas of 100-year floodplains were calculated manually using FIRM panels.

4.9.3. Existing Conditions

There are approximately 9,681 acres of mapped 100-year floodplains in the 90/110 Study Area and approximately 6,875 acres of mapped 100-year floodplains in the 125 Study Area from New York City to Niagara Falls. Exhibit 4-13 below summarizes mapped 100-year floodplains within the study area and a description of floodplains in each county is presented in Appendix G.8.

4.9.4. Environmental Consequences

Comparison of Alternatives

The sections below describe encroachments on mapped areas of 100-year floodplains for the Preferred Alternative, Alternative 90B, and Appendix G.8 describes the encroachments for other program alternatives. The installation of tracks on existing former rail embankments, signals, and other ancillary facilities would, in many instances, involve minimal long-term impacts or changes to ground surface elevations. In general, any new embankment material or structures, such as bridges, placed within a floodway may permanently alter the 100-year floodplain limits. Changes to existing drainage structures, such as culverts through the embankment, or addition of new waterway crossings may change long-term peak flow rates upstream and downstream and the 100-year surface water elevation. Placement of new or modified bridge spans could change the hydraulic openings and either increase or decrease flood flows in the long-term.

It is assumed for this evaluation that all new structures, embankments, filling, paving, or other modifications to open channels in floodways would be considered a floodplain encroachment. Encroachments to the floodplain would not necessarily result in a rise to the 100-year surface water elevation. For instance, raising the elevation of spanning structures or reducing the extent of floodplain encroachment could improve floodflows, resulting in a long-term reduction in flooding.

Review of GIS mapping indicates that the Base Alternative and Alternative 90A would have the least impacts to the 100-year floodplain. These alternatives would largely involve work within the right-of-way, with tracks being added in the location of the former track beds or existing access roads. Alternative 90B, the Preferred Alternative, and Alternative 110 would have potential impacts on the 100-year floodplain in more locations than the Base and 90A Alternatives, especially where new third and fourth track construction would occur within a floodway. However, Alternative 90B would involve far fewer floodplain impacts than either Alternatives 110 or 125, due to less filling and work outside of the right-of-way. Since Alternatives 90B and 110 add tracks alongside existing railroad crossings of waterways and floodplains they may involve modifications or use of these existing structures, minimizing the extent of fill required in floodplains. Alternative 110 would add tracks located 15 feet further from the existing tracks than 90B and would involve greater potential for

floodplain impacts. Alternative 125 would involve the greatest impacts on the 100-year floodplain as it would extend on an entirely new alignment, requiring new bridge or culvert construction to accommodate new waterway/floodplain crossings. Short-term impacts related to construction activities are discussed in Section 4.25.3. Appendix G.8 provides more information on potential effects of the other alternatives considered, and the following section addresses potential effects of the Preferred Alternative.

Exhibit 4-13—Mapped FEMA 100-year Floodplains in the Study Area

County	Acres of 100-Year Floodplains ²	
	90/110 Study Area	125 Study Area
New York	256	256
Bronx	179	179
Westchester	703	703
Putnam	340	340
Dutchess	1,766	1,766
Columbia	1,244	1,244
Rensselaer	751	752
Albany	90	43
Schenectady	179	40
Schoharie	0	131
Montgomery	7	0
Herkimer	904	45
Oneida	780	81
Madison	226	110
Onondaga	712	547
Cayuga	316	45
Wayne ¹	720	8
Monroe	237	296
Genesee	234	247
Erie	15	20
Niagara	22	22
TOTAL	9,681	6,875
Notes 1 No digital data available from FEMA. Approximate calculations completed manually. 2 Numbers have been rounded to the nearest acre. The 90/110 Study Area is used for analysis of Alternatives 90A, 90B, and 110 and consists of the existing 464-mile long Empire Corridor alignment. The 125 Study Area is used for analysis of Alternative 125 and consists of portions of the existing Empire Corridor and new alignment and is 450 miles long. The study area width is defined as being within 300 feet of the corridor centerline. Source: Federal Emergency Management Agency, Flood Insurance Rate Maps, 2010, 2018.		

Alternative 90B (Preferred Alternative)

Because the extent to which the Preferred Alternative will involve encroachments and fill that may increase flood hazards is not yet known, the assessment identified the potential for impacts. The discussion below identifies the locations where Alternative 90B may incur work within or proximal to floodplains and potentially involve impacts on floodplains. The Preferred Alternative has the potential to increase flood hazards, however, this could be mitigated by design in the Tier 2 assessments.

Empire Corridor South

The impacts of the Preferred Alternative include impacts from the following Alternative 90A projects:

- Construction of four miles of second track through Manhattan (MPs 9 to 13), and 1.4 miles (MPs 23.8 to 25.2) of new track under the Tappan Zee Bridge, for the Tarrytown Pocket Track/Interlocking, would encroach on floodplains associated with the Hudson River and minor tributaries, such as the Harlem River at MP 10.
- Along this section, portions of the 10 miles of new third track (MPs 53 to 63) and improvements at the Poughkeepsie Yard/Storage Facility (MPs 71 to 75.8) would be located within mapped floodplains associated with the Hudson River and its tributaries such as Breakneck Brook, Catskill Aqueduct, Cascade Brook, Gordons Brook and Fishkill Creek.
- North of Poughkeepsie and south of Albany-Rensselaer Station (MPs 75.8 to 140), proposed improvements would include rock slope stabilization (MPs 105 to 130) and three new control points (CP 82, CP 99, and CP 136), and improvements at Rhinecliff Station (high-level platforms) and Hudson Station (new Ferry Street Bridge and track realignments). Much of the railroad alignment in this area would pass through Hudson River floodplains and floodplains of tributaries east of the Hudson River, but some of these improvements that are at-grade may have a minimal impact on flooding characteristics.
- Alternative 90B would also include replacement of the Livingston Avenue Bridge, which would pass over the Hudson River and its floodplain at the Rensselaer/Albany County Line.

Empire Corridor West/Niagara Branch

The impacts of the Preferred Alternative include impacts from the following Alternative 90A projects.

- With Alternative 90B, track improvements would include 10 miles of third track between MPs 169 and 179, and Amsterdam Station improvements. This entire 10-mile segment would closely adjoin the banks of the Mohawk River through Schenectady and Montgomery counties. Floodplains associated with the Mohawk River and its tributaries are located along the alignment. Although impacts in these areas may be contained within the current right-of-way, there would still be potential for minimal encroachment on floodplains in these areas.
- West of MP 175, the railroad alignment would continue to closely adjoin the banks of the Mohawk River and Erie Canal through MP 253. Floodplains associated with the Mohawk River and the Erie Canal, as well as numerous tributaries would be located along the track. From MPs 253 to 295, the alignment would cross numerous waterways and their associated floodplains. Since this work would be performed within the current right-of-way, it would be unlikely to impact the floodplain through this segment.
- In the area of the Syracuse Station track improvements, Alternative 90B would pass through floodplains associated with Ley Creek (MP 287), the Erie Canal and Onondaga Lake (MPs 292.5 to 292.75).

- Rochester third track improvements are proposed along nine miles (MPs 373 to 382) west of Rochester Station. These third track improvements could have the potential to impact floodplains associated with the Erie Canal (MP 374.5) and Little Black Creek (MPs 377.5 to 378.5).
- Alternative 90B would also include the addition of a third track along 11 miles (MPs 382 to 393) in western Monroe and eastern Genesee Counties. The addition of this track will encroach on floodplains associated with Little Black Creek, Robins Brook and Black Creek.
- The proposed double track (MPs QDN17 to QDN23.2) could have the potential to impact floodplains associated with Bergholtz Creek (MP QDN20) and Cayuga Creek (MP QDN21.5).

Third and fourth track improvements for the Preferred Alternative, Alternative 90B, start at MP 160 in the City of Schenectady and extend west to MP 430, east of Buffalo.

- In Schenectady County, Alternative 90B would cross approximately eight waterways. Floodplains exist along these waterways, especially along the Mohawk River, which crosses the alignment at MP 160 and closely adjoins the rail line from approximately MP 166 to the county line (MP 169.5). There would be potential to directly or indirectly impact floodplains in these areas from the construction of new track.
- The railroad would continue to adjoin the north bank of the Mohawk River/Erie Canal through all of Montgomery County, largely remaining within 50 to 1,000 feet of the river/canal. In addition, there would be approximately 35 waterway crossings, primarily over tributaries of the Mohawk River. Floodplains exist along the Mohawk River in Montgomery County at MP 201.
- The railroad would continue to adjoin the north bank of the Mohawk River/Erie Canal through all of Herkimer County, largely remaining within or adjacent to the mapped floodplains of the Mohawk River and Erie Canal. In addition, Alternative 90B would cross the floodplains of East Canada Creek (MP 210) and West Canada Creek (MP 223).
- Alternative 90B would extend through Oneida County, paralleling the Erie Canal/Mohawk River between Utica and Rome and remaining within or adjacent to its floodplain, before diverging west to flow into Oneida Lake. The alternative would cross approximately 12 waterways in this county. In addition to the Mohawk River/Erie Canal floodplain (roughly between MPs 254 and 264), Alternative 90B would cross floodplains associated with Sauquoit Creek (MP 240.5), Oriskany Creek (MP 244.5), Mud Creek (MPs 256 to 256.5) and Stony Creek (MP 261) and enter the floodplain of Oneida Creek at the county line (MP 264).
- In Madison County, Alternative 90B would cross 11 waterways and would cross seven mapped floodplain areas associated with these crossings. Entering the county, the alternative would be located within the floodplain of Oneida Creek (MP 264) and then would pass floodplains associated with Cowaselon Creek (MP 266), Dutch Settlement Creek (MPs 268 to 268.5), the Old Erie Canal/Owlville Creek (MP 272), Canaseraga Creek (MPs 272.5 to 273.75), Chittenango Creek (MPs 276 to 277) and Pools Brook (MP 278).
- There are 16 waterway crossings and 10 floodplain areas that Alternative 90B would traverse in Onondaga County. The alignment would enter the eastern portion of the county within the floodplain of Pools Brook (MP 278.5). It would then pass through floodplains associated with Lake Brook and Limestone Creek (MPs 280 to 283.5), Butternut Creek (MP 285), Ley Creek (MP 287), the Erie Canal and Onondaga Lake (MPs 292.5 to 292.75), Geddes Brook (MPs 294.75 to 295.75), Nine Mile Creek (MPs 296.5 to 296.75), White Bottom Creek (MPs 302.5 to 303.5), Carpenters Brook (MP 305.5), and Skaneateles Creek (MPs 307 to 309 at the county line).
- In Cayuga County, Alternative 90B would enter the county and would remain within or adjacent to floodplains associated with Skaneateles Creek (MPs 309 to 311.5). The railroad alignment

would then pass through floodplains associated with Putnam and Spring Brook (MPs 311.75 to 312.5), Owasco Outlet (MPs 315.5 and 315.75), and Swamp Brook (MPs 316.25 to 316.5). The alignment would be in, or adjacent to, floodplains associated with the Seneca River from MP 318 to the county line (MP 320).

- There would be approximately 18 waterway crossings in Wayne County. Floodplains exist along these waterways, especially along Black Creek, the Erie Canal, Ganargua Creek, Red Creek and numerous unnamed tributaries to these waterways that cross the alternative. Therefore, both third and fourth track improvements in this county could have the potential to impact floodplains in these areas.
- Alternative 90B would be in or adjacent to seven floodplain areas associated with 19 waterway crossings in Monroe County. The railroad alignment would be within, or adjacent to, floodplains associated with Thomas Creek for roughly 2.5 miles in eastern Monroe County (MPs 359 to 361.5). It would also traverse floodplains associated with Irondequoit Creek (MP 363), Allen Creek (MP 365.5), the Genesee River (MP 371.5), the Erie Canal (MP 374.5), Little Black Creek (MPs 377.5 to 378.5) and Black Creek (MP 386).
- There would be approximately 17 waterway crossings in Genesee County and numerous floodplain areas that Alternative 90B would cross. The alignment would traverse floodplains associated with Black Creek and its tributaries (MPs 389 and 396.5). It would then be within, or adjacent to, floodplains associated with Tonawanda Creek (MPs 402.5 to 404.5) and several crossings of floodplains associated with Murder Creek and its tributaries (MPs 411.75 to 412.25, 413.75 to 414.25 and 417.5).
- Alternative 90B third track improvements would only traverse two floodplain areas associated with Ellicott Creek (MP 422.5) and Scajaquada Creek (MP QDN 6.3) in Erie County.

4.9.5. Potential Mitigation Strategies

Project development will incorporate avoidance and minimization of floodplain impacts to the extent practicable. Hydraulic analysis may be required to demonstrate the effects the design will have on mapped floodplains, and to determine mitigation appropriate for any effects on flood elevations. For new or modified bridges or culverts, mitigation might include improving hydraulic openings to accommodate passage of flood flows. Other types of mitigation that might be considered include minimizing encroachments in floodway areas and floodway fringe areas or providing compensatory flood storage in other areas.

In general, the authority for requiring a hydraulic analysis to satisfy the "no-rise" criteria stems from 44 CFR 60.3(d)(3). Specific state authority to require a "no-rise" analysis (for state-owned and state-funded projects, only) stems from 6 NYCRR 502.4(b). Local authority stems from Article 36 of the Environmental Conservation Law (ECL), as well as various provisions in the applicable local law for flood damage prevention, which are based on FEMA minimum standards, and require technical evaluations for "no-rise" and "no adverse effect." While a hydraulic analysis is considered an option for satisfying the "no adverse effects" criteria for proposed development solely in the floodway fringe, it may be unreasonable to require such an analysis for anything but a large development with a large quantity of fill.⁸³

If required by the NYSDEC or FEMA, a Conditional Letter of Map Revision (CLOMR) will be prepared

⁸³ NYSDEC, 2012. Floodplain Construction Requirements in New York State. <<http://www.dec.ny.gov/lands/40576.html>>, accessed March 2012.

to request a modification of the floodplain and floodplain maps to mitigate for increases in flood elevations. Where the floodplain elevations and limits are changed by the program, it will be necessary to file a Letter of Map Revision (LOMR) with FEMA after construction is complete so that the FIRMs can be updated.

Section 4.20.5 describes resiliency measures for sea level rise being undertaken in portions of the program area by Metro-North and the New York State Canal Corporation.

4.9.6. Future Analysis

During the Tier 2 assessments, refinements to the impact assessment based on design of the Preferred Alternative, Alternative 90B, and site-specific mapping, and updated floodplain maps available will be obtained. All proposed floodplain development must meet the "no adverse affect" criteria, while proposed floodway development must also meet the "no-rise" criteria.⁸⁴

Ultimately, it is the responsibility of the local Floodplain Administrator (FPA) to determine what form of technical evaluation is acceptable. In addition, pursuant to 6 NYCRR Part 501, NYSDEC may require a permit for any regulated activity on flood control lands under the jurisdiction of NYSDEC.⁸⁵

As mentioned above, proposed modifications to floodplains will be submitted to FEMA for approval of a CLOMR prior to construction and where the floodplain elevations and limits are changed by the program, it will be necessary to file a LOMR with FEMA after construction is complete so that the Flood Insurance Rate Maps (FIRMs) can be updated.

4.10. Wetlands

4.10.1. Regulatory Context

Federal agencies are required to avoid and minimize wetland impacts to the extent possible per Executive Order (EO) 11990,⁸⁶ and the U.S. ACE has jurisdictional responsibilities under Section 404 of the U.S. Clean Water Act. Many wetlands and other aquatic features are considered "waters of the U.S.," and these "jurisdictional" areas are protected under Section 404. Wetlands are defined under the U.S. Clean Water Act (CWA)⁸⁷ as, *"Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas."*⁸⁸

The national standard for wetland classification is the U.S. Fish and Wildlife Classification System, which is used in the mapping of wetlands and deepwater habitats performed for the National

⁸⁴ NYSDEC, 2012. Floodplain Development and Floodway Guidance. NYSDOT, <<http://www.dec.ny.gov/lands/24281.html>>, website accessed March 2012.

⁸⁵ NYSDEC, 2012. Part 501: Use of Flood Control Lands. NYSDEC, <<http://www.dec.ny.gov/regs/4472.html>>, website accessed March 2012.

⁸⁶ As amended by EO 12608, September 9, 1987.

⁸⁷ As defined by the U.S. ACE (Title 33 CFR 328.3, 1986) and the U.S. EPA (40 CFR 230.3, 1980).

⁸⁸ Environmental Laboratory. *Corps of Engineers Wetland Delineation Manual Technical Report Y-87-1*. Prepared for the U.S. ACE, Washington, D.C. Final Report. January 1987.

Wetlands Inventory (NWI).⁸⁹ The five major wetland and deepwater systems are marine, estuarine, riverine, palustrine (non-tidal freshwater or salinities less than 0.5 parts per thousand), and lacustrine.

In New York State, two types of wetlands are the focus of protection: tidal and freshwater. The New York State Tidal Wetlands Act has been enacted for the preservation and protection of tidal wetlands, located at the critical interface between land and tidal waters. Appendix G.9 presents tidal and freshwater wetland classifications found in the study area. The New York State Freshwater Wetlands Act regulates wetlands according to four classes of wetlands (Classes I through IV), with Class I wetlands having the highest value. Under both sets of regulations, adjacent areas, or the buffer zone around wetlands, are defined and regulated. Under the tidal wetland regulations, adjacent areas are defined as areas not included in any of the defined tidal wetland categories (refer to Appendix G.9 for study area categories) that are generally not inundated by tidal waters and that extend 300 feet landward of the most landward tidal wetlands boundary or to an elevation of ten feet.

4.10.2. Methodology

Federal and state tidal and freshwater wetlands within 300 feet of the corridor centerline (study area) for each corridor were mapped and characterized. Available GIS mapping from the U.S. Fish and Wildlife Service National Wetlands Inventory and the NYSDEC Hudson River tidal wetlands and freshwater wetlands were compiled for the 600-foot-wide study area. The three wetland layers were overlaid to create the wetland totals shown in Exhibit 4-14.

Exhibit 4-14 displays the study area wetlands and also accounts for the overlaps in the various federal and state wetland layers. Electronic mapping available from NYSDEC included delineation of tidal wetland adjacent areas, so these areas were also tabulated in this exhibit.

4.10.3. Existing Conditions

There are approximately 8,426 acres of mapped NWI and NYSDEC wetlands in the 90/110 Study Area. There are approximately 6,135 acres of mapped NWI and NYSDEC wetlands in the 125 Study Area. The deepwater and wetlands mapped in the National Wetlands Inventory (NWI) in the Empire Corridor Study area are classified by the U.S. Fish and Wildlife Service into seven groups: estuarine deepwater, estuarine wetlands, riverine, freshwater (or palustrine) emergent wetlands, freshwater forested/shrub wetland, freshwater pond, and lakes.

State-regulated wetlands in the study area include: 1) Tidal wetlands, which are found around New York City and up the Hudson River, and 2) Freshwater wetlands which are found on river and lakes across the state. The NYSDEC tidal wetland categories mapped in the Empire Corridor include open water (71% of tidal wetlands); broad-leaf vegetation (7%); graminoid vegetation (14%); coastal shoals, bars, and mudflats (1%); vegetated coastal shoals, bars, and mudflats (1%); swamp shrub (1%); and swamp tree (5%).

In the existing Empire Corridor (90/110 Study area), NYSDEC freshwater wetlands include the highest value wetlands, Class I, which comprises 40 percent of total NYSDEC freshwater wetlands. Class II wetlands comprise 55 percent of NYSDEC freshwater wetlands in the study area, compared to Class III (3%), and Class IV (2%) of total freshwater wetlands in the study area counties.

⁸⁹ Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. *Classification of Wetlands and Deepwater Habitats of the United States*. U.S., Fish and Wildlife Service (FWS), FWS/OBS-79/31, 1979.

Exhibit 4-14—Summary of Federal and State Wetlands in the Study Area

County	Acres of Wetlands ¹														Total	
	NWI		NWI and NYSDEC Freshwater Wetlands		NWI and NYSDEC Tidal Wetlands		NWI, NYSDEC Freshwater and Tidal Wetlands		NYSDEC Freshwater		NYSDEC Tidal Wetlands		NYSDEC Tidal and Freshwater Wetlands			
	90/110 Study Area	125 Study Area	90/110 Study Area	125 Study Area	90/110 Study Area	125 Study Area	90/110 Study Area	125 Study Area	90/110 Study Area	125 Study Area	90/110 Study Area	125 Study Area	90/110 Study Area	125 Study Area	90/110 Study Area	125 Study Area
New York	56	57	0	0	0	0	0	0	0	0	0	0	0	0	56	57
Bronx	21	21	0	0	0	0	0	0	0	0	0	0	0	0	21	21
Westchester	150	137	0	0	393	371	11	11	0	0	60	60	1	1	615	580
Putnam	0	0	0	0	211	206	40	42	0	0	37	37	1	1	289	286
Dutchess	0	0	0	0	1,017	1,020	185	185	0	0	104	104	6	6	1,312	1,315
Columbia	0	0	0	0	449	451	422	427	0	0	62	61	27	27	960	966
Rensselaer	0	0	0	0	66	62	76	76	0	0	13	13	9	10	164	161
Albany	75	4	28	0	6	7	0	0	26	0	1	1	0	0	136	12
Schenectady	39	60	22	0	0	0	0	0	24	0	0	0	0	0	85	60
Schoharie	0	51	0	0	0	0	0	0	0	0	0	0	0	0	0	51
Montgomery	336	62	113	43	0	0	0	0	181	65	0	0	0	0	630	170
Herkimer	288	72	40	4	0	0	0	0	26	5	0	0	0	0	354	81
Oneida	224	62	348	118	0	0	0	0	258	72	0	0	0	0	830	252
Madison	196	80	54	11	0	0	0	0	32	0	0	0	0	0	282	91
Onondaga	152	102	212	163	0	0	0	0	204	219	0	0	0	0	568	484
Cayuga	68	45	96	86	0	0	0	0	36	27	0	0	0	0	200	158
Wayne	343	123	430	191	0	0	0	0	146	38	0	0	0	0	919	352
Monroe	138	138	125	106	0	0	0	0	43	21	0	0	0	0	306	265
Genesee	250	234	119	182	0	0	0	0	52	11	0	0	0	0	421	427
Erie	176	184	26	83	0	0	0	0	10	13	0	0	0	0	212	280
Niagara	66	66	0	0	0	0	0	0	0	0	0	0	0	0	66	66
Total	2,578	1,498	1,613	987	2,142	2,117	734	741	1,038	471	277	276	44	45	8,426	6,135

^{1/} Adjacent Area Tidal wetland buffer classification are not included in the totals.

Note: The 90/110 Study Area is used for analysis of Alternatives 90A, 90B, and 110 and consists of the existing 464-mile long Empire Corridor alignment. The 125 Study Area is used for analysis of Alternative 125 and consists of portions of the existing Empire Corridor and new alignment and is 450 miles long. The study area width is defined as being within 300 feet of the corridor centerline.

In the 125 Study Area, NYSDEC freshwater wetlands include the highest value wetlands, Class I, which comprises 55 percent of total NYSDEC freshwater wetlands. Class II wetlands comprise 32 percent of NYSDEC freshwater wetlands in the study area, compared to Class III (13%), and Class IV (less than 1%) of total freshwater wetlands in the study area counties.

A detailed discussion by county of the existing federal and state wetlands along the 90/110 Study Area and the 125 Study Area is presented in Appendix G.9.

4.10.4. Environmental Consequences

Comparison of Alternatives

This Tier 1 preliminary assessment describes potential impacts of program alternatives to mapped areas of National Wetlands Inventory (NWI) and New York State Department of Environmental Conservation (NYSDEC) State Regulated Wetlands. Although mapped NWI and NYSDEC wetlands overlap the existing mainline track bed in some locations, it is unlikely that wetlands would be found within the railbed; however, there would be potential for wetlands to occur within the existing right-of-way. Therefore, work conducted within and beyond the right-of-way may have the potential to impact wetlands.

Work activities such as track widening for new track, road realignment, station improvements, culvert widening, and other ground disturbance have the potential to affect wetlands through impacts such as dredging or filling. Temporary impacts may include temporary placement of fill material into wetlands or other water features, the removal of vegetation from areas that would be later regraded and reseeded, temporary loss of aquatic habitat, and disturbance and displacement of wildlife during construction. These impacts would be associated with construction activities such as temporary staging areas and construction access roads. Long-term impacts may include permanent filling for railroad facilities, such as embankments or piers or construction of permanent access roads. This loss of wetlands could, in turn, reduce attenuation of floodflows and drainage from track areas and thereby decrease stormwater retention and stormwater quality. Short-term impacts related to construction activities are discussed in Section 4.25.3.

The Base and 90A Alternatives and Alternative 90B (the Preferred Alternative) would involve work largely within the right-of-way, with tracks added in the location of the former track beds or existing access roads, and minimal impacts to wetlands would be anticipated. Alternative 110 may have more impacts to wetlands than the Base Alternative or Alternatives 90A and 90B because proposed work would involve activities extending further from the current mainline track and extending 15 feet further than Alternative 90B. Alternatives 90A, 90B, and 110 would have potential to affect 39 new and existing crossings along Empire Corridor South. Alternative 90A would potentially impact 29 existing crossings along Empire Corridor West, compared to potential impacts for track additions at 454 crossings (Alternative 90B) and 473 crossings (Alternative 110). Alternative 125 would involve even greater impacts to wetlands as it would be located on new alignment through primarily undeveloped and rural areas, with potential for impacts at 513 new or existing wetland crossings.

The sections below identify the areas where improvements or new track for the Preferred Alternative (Alternative 90B) would be constructed in or adjacent to mapped wetlands. Appendix G.9 addresses the potential impacts of the other alternatives considered, and the following section addresses potential effects of the Preferred Alternative.

Alternative 90B (Preferred Alternative)

Road realignment, access road construction, and culvert improvements proposed under Alternative 90B would occur within and outside of the right-of-way, although the location of this proposed work would be further refined in the Tier 2 process.

Empire Corridor South

The impacts of the Preferred Alternative include impacts from the following Alternative 90A projects. Although some of the work would be conducted within the existing right-of-way, ground disturbance in proposed work areas that overlap mapped wetlands, either inside or outside the existing right-of-way, could cause wetland impacts through dredging, filling or other disturbance. Depending on design, there is potential for impact to wetlands and waters associated with the Hudson River and its tributaries through dredging, filling or other construction impacts.

- Alternative 90B would include construction of four miles of second track through urbanized areas of Manhattan (SRP-1, MPs 9 to 13) and 1.4 miles of new track extending under the Tappan Zee Bridge (SRP-2, 23.8-25.2). The Hudson River is adjacent to the rail line throughout these proposed improvement areas. One mapped NWI and NYSDEC wetlands associated with the Hudson River and the Harlem River confluence is located in the proposed work area. Additional track construction over the Harlem River (MP 10) could have the potential to temporarily or permanently impact mapped wetlands at this location. Improvements under the Tappan Zee Bridge would be within the current right-of-way and impacts to wetlands would be unlikely.
- With Alternative 90B, signal improvements proposed along 43 miles (MPs 32.8 and 75.8) would cross mapped NWI and NYSDEC wetlands approximately 30 times. Crossings are generally small areas of overlap connected to larger adjacent mapped areas associated with the Hudson River and its tributaries to the east. Proposed work would primarily involve signal upgrades within the existing rail bed; therefore, it is unlikely that impacts would occur to wetlands for these improvements.
- New third track in Dutchess County (SRP-3, MPs 53 to 63) would cross wetlands associated with Breakneck Brook (MP 54) and, depending on construction design, a cove at the confluence of Fishkill Creek and the Hudson River (MPs 57.5 to 57.75).
- In addition, improvements at the Poughkeepsie Yard/Storage Facility (MPs 71 to 75.8) would cross Sunfish Cove and its associated wetlands. Ground disturbance in the above-mentioned work areas that overlap wetlands could cause impacts through dredging, filling or other disturbance.
- North of Poughkeepsie and south of Albany-Rensselaer Station, the alignment would cross mapped wetland areas approximately 7 times. NYSDOT anticipates that the new control points and station improvements would occur largely within the right-of-way or current station footprint, and would not likely involve impacts to wetlands.
- Alternative 90B would include the replacement of the Livingston Avenue Bridge over the Hudson River (ES-15, MP 143).

Empire Corridor West/Niagara Branch

The impacts of the Preferred Alternative include impacts from the following Alternative 90A projects. For Alternative 90B, track improvements along the Empire Corridor West/Niagara Branch would include the following:

- Ten miles of third track would be added between MPs 169 and 179 (EW-14a), with improvements at the Amsterdam Station along the west end of this segment (EIS-1, MP 177.6). Mapped wetlands associated with the Mohawk River abut the right-of-way on its southern edge for a majority of the proposed work areas along this 10-mile segment and cross the alignment three times around MP 178. Although this work would occur within the existing right-of-way, ground disturbance and construction in proposed work areas that overlap wetland areas could cause wetland impacts through dredging or filling activities. Updates to three control points (EW-05, MPs 175, 239 and 248) would not cross any wetlands and would not likely involve impacts to wetlands.
- Alternative 90B would include Syracuse Station track improvements (EIS-6, MPs 290 to 294), and third track improvements along 11 miles (EW-16, MPs 373 to 382) west of the Rochester Station. Work for the Syracuse Station would adjoin mapped wetlands associated with Ley Creek and Onondaga Lake and would also include crossings of eight mapped wetlands along the Erie Canal and Onondaga Lake. West of the Rochester Station, proposed improvements would cross two mapped NWI and NYSDEC wetlands associated with the Erie Canal (MP 374.5), and a tributary of Black Creek (MP 379.5). Therefore, reconstruction of the Syracuse Station and third track improvements west of Rochester would have the potential to impact wetlands through dredging, filling, or construction activities at these crossings.
- The third track proposed along 11 miles located largely west of the designated urban area around Rochester (EW-20, MPs 382 to 393) will cross mapped wetland areas, primarily associated with Black Creek and its tributaries, approximately 11 times. Although this work would occur within the existing right-of-way, ground disturbance and construction in proposed work areas that overlap wetland areas could cause wetland impacts through dredging or filling activities.
- The proposed station improvements of the Buffalo-Depew Station (EIS-10, MPs 429 to 433) would cross two small mapped wetland areas. In addition, along the proposed double tracking work area (EW-17, MPs QDN17 to QDN23.2 along the Niagara Branch), work would cross three mapped wetland areas associated with Bergholtz and Cayuga Creeks. Work conducted within these mapped wetland areas described above would have the potential to impact the wetland through dredging, filling or construction activities.

NWI and NYSDEC have mapped several wetland features within the proposed work areas of third and fourth track installation associated with the Preferred Alternative, Alternative 90B, both within and outside of the current right-of-way. There would be approximately 429 locations where new third or fourth track would cross mapped wetland areas and dredging or filling activities from construction of new track could cause wetland impacts. In addition, construction where wetlands are present would have the potential to temporarily impact wetlands through staging and storage of equipment. These areas are further described below.

- In Schenectady County, new track proposed for Alternative 90B would cross 19 mapped wetlands. These mapped wetlands are associated with the Hudson River (MP 160.5), an unnamed tributary (MP 162.75) and a small wetland area associated with Verf Kill near the western end of the county (MP 167.75).
- Proposed third and fourth tracks for Alternative 90B would cross approximately 55 mapped wetland areas in Montgomery County. Alternative 90B would closely follow the northern banks of the Mohawk River through Montgomery County, and all the mapped wetlands areas are associated with the Mohawk River or its tributaries to the north. Most of the wetlands that would be crossed by the third or fourth track improvements are small individual areas; however, there

are several areas where multiple crossings are part of a larger complex of wetlands (MPs 177.5 to 178.75, 188.75 to 189.5 and 193 to 194).

- Proposed third track would only cross 52 mapped wetlands in Herkimer County associated with the Mohawk River/Erie Canal (MPs 232 to 232.5).
- There would be approximately 53 crossings of wetlands in Oneida County with the addition of new track for Alternative 90B. In the eastern half of the county, the majority of wetlands are associated with the Mohawk River and Erie Canal. These include numerous small crossings of larger complexes north and south of the proposed alignment. After passing Rome, the proposed alternative would move south of the Mohawk River/Erie Canal and would cross numerous wetlands associated with Mud Creek (MPs 256 to 257.5), Stony Creek (MP 261) and tributaries of these creeks. In Madison County, proposed new track would only cross 27 mapped wetland areas. The track cross through several unnamed streams, one small area associated with and unnamed pond (MP 266) and one associated with Chittenango Creek (MP 276.5).
- In Onondaga County, new track associated with Alternative 90B would cross approximately 38 mapped wetland areas. Around Onondaga Lake, Alternative 90B would cross several small wetland areas associated with the Old Barge Canal and the lake (MPs 291 to 293), before heading further west and crossing numerous small wetland areas associated with Nine Mile Creek, Dead Man Creek and other tributaries. Several crossings within larger complexes are associated with White Bottom Creek and the Erie Canal (MPs 301.5 to 304) and Carpenters Brook and the Old Erie Canal (MPs 305 to 307.5).
- In Cayuga County, new track from Alternative 90B would cross wetlands approximately 11 times. Most of these are small individual wetlands associated with Putnam Brook, Spring Brook and Swamp Brook; however, the alignment would cross a larger complex associated with the Seneca River and Hog Island Wildlife Management in the western portion of the county (MPs 318 to 320).
- Alternative 90B would cross mapped wetlands approximately 100 times in Wayne County. The majority of these crossings would be over small wetlands associated with the Erie Canal, Black Creek, Clyde River, Ganargua Creek and Red Creek and their tributaries.
- Alternative 90B would cross mapped wetlands approximately 25 times in Monroe County. The alignment would cross one wetland area associated with Irondequoit Creek (MP 362.75), several small wetland areas, and wetlands associated with the Genesee River, the Erie Canal and Black Creek.
- In Genesee County, new track for Alternative 90B would cross mapped wetlands areas approximately 45 times. The alignment would cross several small wetland areas as well as small areas associated with Robins Brook, Black Creek, Tonawanda Creek, Bowen Creek and Murder Creek. In addition, Alternative 90B would cross mapped wetlands several times through a larger complex associated with a tributary of Murder Creek (MPs 409 to 412.5).
- New track for Alternative 90B would cross mapped wetlands approximately 15 times in Erie County. Most of these crossings would be over small wetland areas (MPs 418.5 to 418.75, 421.75, 427 to 428.5 and 429.75). One crossing would be over wetlands associated with Ellicott Creek (MP 422.25).

Depending on design, these wetlands features would have the potential to be directly or indirectly impacted by any dredging or filling associated with proposed work under Alternative 90B.

4.10.5. Potential Mitigation Strategies

Under the Section 404 of the CWA, impacts to waters of the U.S., including wetlands and open water features, must be avoided, minimized, or mitigated (in order of preference), with the goal of achieving no net loss of functions and values of jurisdictional wetlands (33 United States Code 1251 et seq.). In planning, design, and construction in Tier 2 assessments, means of avoiding and minimizing wetland impacts will be identified for the Preferred Alternative, Alternative 90B. Where avoidance and minimization would not be practicable, mitigation for impacts to wetlands could be achieved through the use of temporary and permanent Best Management Practices (BMPs).

Temporary BMPs would include implementing measures specified in the Stormwater Pollution Prevention Plan or Erosion and Sedimentation Control Plan. Temporary BMPs could include, but are not limited to:

- Covering areas of temporary construction disturbance with geotextile, straw, soil, or construction matting prior to use;
- Placing orange temporary fences and sediment-control measures to protect existing wetlands that are outside the planned area of disturbance;
- Coordinating with the local jurisdiction for the location and design of stormwater ponds;
- Implementing the use of berms, brush barriers, check dams, erosion control blankets, filter strips, sandbag barriers, sediment basins, silt fences, straw-bale barriers, surface roughening, or diversion channels to reduce erosion and sedimentation during all phases of construction;
- When practicable, constructing in waterways during low-flow or dry periods;
- Diverting flowing water around active construction areas;
- Not storing fill material in wetlands or open water features;
- Not allowing staging equipment, storing materials, chemical use (e.g., soil stabilizers, dust inhibitors, and fertilizers), or equipment refueling within 50 feet of wetlands or open water features;
- Designing any new or modified bridges to minimize direct discharge of stormwater runoff into wetlands; and
- Incorporating measures to prevent spread or propagation of invasive species.

Depending on the extent of impacts of the Preferred Alternative, Alternative 90B, and the need for an individual permit, findings and evaluations under Section 404(b)(1) Guidelines may be required in Tier 2.

Impacted wetlands and open water features will be mitigated in accordance with current U.S. ACE and state jurisdictional mitigation policies. The U.S. ACE and NYSDEC generally requires compensatory mitigation on a site-specific basis for impacts to wetland functions and values.⁹⁰ Mitigation plans to compensate for impacts to NYSDEC protected wetlands are developed on a case-

⁹⁰ USACE, New York District. "Public Notice Announcing the Compensatory Mitigation Guidelines and Mitigation Checklist For Review of Mitigation Plans For the U.S. ACE, New York District." January 10, 2005. Accessed March 2011. Available: <<http://www.nan.usace.army.mil/business/buslinks/regulat/index.php?compensatory>>.

by-case basis, depending on the type of wetlands that would be impacted.⁹¹

A mitigation plan would be developed in coordination with the U.S. ACE and other appropriate agencies, if needed, during wetland permitting. Strategies to offset impacts to wetlands would include on-site or off-site restoration, creation, or enhancement of wetlands within the same watershed as any impacted wetlands.

4.10.6. Future Analysis

Tier 2 assessments will refine the Tier 1 impact assessment based on advanced design for the Preferred Alternative, Alternative 90B, and site-specific mapping and delineation of existing mapped and newly identified wetlands that may be impacted. Wetland boundaries will be refined using wetland delineation techniques for those projects that may involve impacts. This assessment will include further evaluation of avoidance, minimization, or mitigation measures and identification of design refinements needed in these locations.

In most instances, any activity that proposes dredging, filling, or other modification to areas designated as wetlands would require a permit from federal and state regulatory agencies. A permit under Section 404 of the U.S. Clean Water Act, administered by the U.S. ACE, would be necessary to authorize direct impacts (discharge of dredged or fill material) to waters of the U.S., including wetlands. Under Section 10 of the U.S. Rivers and Harbors Act, work in, over, or under navigable waters also requires permit authorization from the U.S. ACE. Under the Section 404/10 permit program, the U.S. ACE issues two types of permits: individual and general permits.

General permits are issued for categories of projects that are presumed to have not more than minimal impacts on the aquatic environment. Individual permits are used for impacts exceeding the regulatory thresholds created for each specific category. The type of U.S. ACE (General or Individual) permit for any wetland impacts will be determined after design of the Preferred Alternative is further advanced and impacts are known.

The NYSDEC also administers permits for regulated activities that would affect protected tidal and freshwater wetlands under the state's Environmental Conservation Law Article 24 (freshwater wetlands) and Article 25 (tidal wetlands). Permit applications must propose mitigation measures to offset any impacts to wetland resources.

4.11. Coastal Resources

4.11.1. Regulatory Context

The New York State Division of Coastal Resources, within the Department of State, implements the Federal Coastal Zone Management Act,⁹² as well as the state's Waterfront Revitalization of Coastal Areas and Inland Waterways Act.⁹³ The defined coastal zone includes the Hudson River south of the Troy Lock and Dam and Lake Erie and Lake Ontario.

⁹¹ NYSDEC. "Freshwater Wetlands Permit Program: Application Procedures." Accessed March 2012.

<<http://www.dec.ny.gov/permits/6277.html>>.

⁹² U.S. Coastal Zone Management Act of 1972 (16 U.S.C. 1451 et seq.) as amended through Public Law No. 109-58, the Energy Policy Act of 2005.

⁹³ NYS Waterfront Revitalization of Coastal Areas and Inland Waterways, Article 42: (910-923).

The State Waterfront Revitalization Program also includes designated inland waterways. Designated inland waterway are major lakes, rivers, and streams designated by the State Legislature as significant because of value as natural, scenic, recreational, historic, and/or economic resources. Projects within designated coastal zone or communities with approved Local Waterfront Revitalization Programs must be consistent with coastal policies.

The state coastal program also designates for protection designated scenic areas and habitats. The state Coastal Atlas identifies the coastal boundary, as well as Scenic Areas of Statewide Significance (SASS) and Significant Coastal Fish and Wildlife Habitats (SCFWH). SASS designation protects scenic landscapes through review of projects requiring federal or state actions, including direct actions, permits, or funding. Similarly, projects affecting SCFWH must address consistency with applicable coastal policies in the federal/state consistency review process.

Federal and state protections and designations for the Hudson River Estuary are also provided under federal and state law. The Hudson River National Estuarine Research Reserve was established as part of the National Estuary Research Reserve System in 1982. The National Estuarine Research Reserve System (NERRS) was created by the Coastal Zone Management Act (CZMA) of 1972, as amended, 16 U.S.C. 1461, to augment the Federal Coastal Zone Management (CZM) Program. The reserve system is a network of protected areas established to promote informed management of the Nation's estuaries and coastal habitats. The reserve system currently consists of 27 reserves in 22 states and territories, protecting over one million acres of estuarine lands and waters.

4.11.2. Methodology

The available GIS mapping delineating the state coastal boundary, Scenic Areas of Statewide Significance, and Significant Coastal Fish and Wildlife Habitats were obtained for study areas within ½ mile of the corridor centerline for all alternatives, and information available from the New York State Division of Coastal Resources website was consulted on these protected SASSs⁹⁴ and SCFWHs.⁹⁵ The lists from the NYS Division of Coastal Resources website of coastal waterways and designated inland waterways⁹⁶ and municipalities that have enacted Local Waterfront Revitalization Plans⁹⁷ were also consulted. Information on the Hudson River National Estuarine Reserve was obtained from the NYSDEC website.^{98,99}

4.11.3. Existing Conditions

Coastal Zone

New York State's coastal zone includes the Hudson River Valley, which extends 150 miles from New York City into upstate New York, and the Great Lakes-St. Lawrence River region, a vast, freshwater

⁹⁴ NYS Division of Coastal Resources, "Scenic Areas of Statewide Significance," Accessed January 5, 2012.

<http://nyswaterfronts.com/waterfront_developed_SASS.asp>.

⁹⁵ NYS Division of Coastal Resources, "Significant Coastal Fish and Wildlife Habitats," Accessed January 5, 2012.

<http://www.nyswaterfronts.com/waterfront_natural_narratives.asp>.

⁹⁶ "Environmental Protection Fund Local Waterfront Revitalization Program: List of Coastal Waterbodies and Designated Inland Waterways," Accessed January 3, 2012. <http://www.nyswaterfronts.com/downloads/pdfs/Waterways%20List_07-10.pdf>.

⁹⁷ "NYS Coastal Management Program: List of Approved Coastal Local Waterfront Revitalization Programs (LWRPs) December 2010," Accessed January 4, 2012. <http://www.nyswaterfronts.com/LWRP_Status.asp>.

⁹⁸ NYSDEC, "Hudson River National Estuarine Research Reserve," Accessed January 9, 2012.

<<http://www.dec.ny.gov/lands/4915.html>>.

⁹⁹ NYSDEC, "Hudson River Estuary Action Agenda," Accessed January 9, 2012. <<http://www.dec.ny.gov/lands/5104.html>>.

non-tidal coastal system. Designated coastal waterways include the Hudson River, Harlem River, Lake Erie, and the Niagara River.

The Empire Corridor South between New York City (Milepost 1) to Rensselaer/Albany Counties (Mileposts 143-144) is entirely within the coastal zone. The Great Lakes coastal zone includes Irondequoit Bay and Creek, a tributary to Lake Ontario, in Monroe County, which crosses the Empire Corridor West in East Rochester/Perinton (Milepost 363).

The Niagara Branch crosses the coastal zone at several locations. It extends into the coastal zone along the Lake Erie waterfront area in Buffalo (between Mileposts QDN 2 and 4) in Erie County and at the Scajaquada Creek, a tributary of the Niagara River, in Buffalo (Milepost 6.3). The Niagara Branch crosses the coastal zone at the Erie Canal crossing at Tonawanda/North Tonawanda (Milepost 13.5) and extends close to the coastal zone along the Niagara River extending north to Milepost 17.5. The end of the Niagara Branch extends into the coastal zone at the Niagara River in Niagara Falls (Milepost QDN 28).

The coastal zone and coastal resources are identical for the 90/110 and the 125 Study Areas, as the corridors merge in these three coastal areas: Hudson River, Great Lakes/Irondequoit Bay and Creek, and Lake Erie/Niagara River. The communities with Local Waterfront Revitalization Programs are largely the same for the alternatives, with the exception of a few communities.

Hudson River Estuary

Four distinct tidal wetland sites on the Hudson River Estuary were designated the Hudson River National Estuarine Research Reserve in 1982, as field laboratories for estuarine research, stewardship and education. The reserve is operated as a partnership between New York State and the National Oceanic and Atmospheric Administration (NOAA) and relates to federally-designated and state-protected sites along 100 miles of the estuary. The reserve is a federal-state partnership program that relates to four federally-designated and state-protected sites along 100 miles of Hudson River Estuary: Piermont Marsh and Iona Island (both located west of the Hudson River), Tivoli Bays, and Stockport Flats.

Inland Designated Waterways

The inland designated waterways in the study area include the Mohawk River, Onondaga Lake, Genesee River, and Tonawanda Creek. However, this designation does not in itself confer protection to the waterway unless the communities have enacted Local Waterfront Revitalization Plans.

Local Waterfront Revitalization Plans

Under the Local Waterfront Revitalization Program (LWRP), communities along the designated coastal waterbodies and these inland designated waterways can enact Local Waterfront Revitalization Plans. Along the Empire Corridor South, there are 19 communities within a half mile of the corridor centerline on the east side of the Hudson River that are covered by LWRPs, which are described in Appendix G.10.

Scenic Areas of Statewide Significance

The coastal zone along the Empire Corridor South also includes six state-designated Scenic Areas of Statewide Significance. The Hudson River Valley coastal region includes six areas in Columbia, Greene, Dutchess and Ulster Counties, which were designated in 1993 as Scenic Areas of Statewide Significance (SASS): The Hudson Highlands SASS, the Estates District SASS, the Esopus/Lloyd SASS,

the Ulster North SASS, the Catskill-Olana SASS, and the Columbia-Greene North SASS, which are described in Appendix G.10. The areas in both the Hudson Valley and East End encompass unique, highly scenic landscapes accessible to the public and recognized for their outstanding quality.

Significant Coastal Fish and Wildlife Habitats

The coastal zone along the study area includes 31 Significant Coastal Fish and Wildlife Habitats (SCFWH) as shown in Appendix G.10. These SCFWH areas include areas within the Hudson River National Estuarine Reserve (Tivoli Bays, Iona Islands), a National Natural Landmark (Iona Islands on the west side of the Hudson River), and other federal and state parklands. Of these areas, all but three are located along the Hudson River.

The Tivoli Bays is designated by NYSDEC as a Natural Heritage Area in New York State. The Tivoli Bays is also included in the Mid-Hudson Historic Shorelands Scenic District designated under Article 49 of the Environmental Conservation Law.

4.11.4. Environmental Consequences

Comparison of Alternatives

The sections below describe impacts to coastal resources, including the coastal zone, Significant Coastal Fish and Wildlife Habitats, and Scenic Areas of Statewide Significance. The protections to Inland Designated Waterways are implemented through Local Waterfront Revitalization Plans in the communities shown in Appendix G.10, so work proposed in these communities will need to be consistent with the local plans.

Along Empire Corridor South, the railroad transects the coastal zone along the Hudson River, which is the area with the greatest potential for coastal impacts. The Empire Corridor crosses through 11 Significant Coastal Fish and Wildlife Habitats (SCFWHs) and 6 Scenic Areas of Statewide Significance (SASSs) in this area. For the Base Alternative and Alternative 90A (which are included in Alternative 90B), proposed work within or adjoining these SCFWHs and SASSs along this corridor will not involve substantial impacts outside of the right-of-way and will not result in appreciable changes in visual quality, and no impacts to the scenic qualities of the SASSs are anticipated. All of the Build Alternatives will involve bridgework in coastal areas along both Empire Corridor South and all but Alternative 90A will involve bridgework in coastal resources along Empire Corridor West. The impacts of the other Build Alternatives are comparable to that of the Preferred Alternative, as described in detail in Appendix G.10. Coastal impacts are addressed for Alternative 90B (the Preferred Alternative) below.

Alternative 90B (Preferred Alternative)

Long-term impacts of work within the coastal zone may include potential for visual impacts or resource degradation due to loss or filling of wetlands or waterways or water quality impacts (e.g., potential for spills or releases from train operations). Short-term impacts related to construction are discussed in Section 4.25.3.

In the Tier 1 assessment, the extent to which the Preferred Alternative would involve permanent fill or temporary construction disturbances to coastal resources cannot be quantified, so the potential areas of coastal resources that may be affected by the program are described below.

Empire Corridor South

The Preferred Alternative includes improvements for Alternative 90A that will extend through or in the vicinity of the following SCFWHs and SASSs along Empire Corridor South.

- The **Lower Hudson Reach SCFWH** adjoins the railroad where it closely borders the Hudson River between MPs 1 to 17 (including MPs 9 to 13 where 4 miles of second track will be built in midtown Manhattan), but the second track would be located within the right-of-way, and this work is not anticipated to involve coastal impacts. Alternative 90B also includes 1.4 miles of new track (MPs 23.8 to 25.2), extending under the Tappan Zee Bridge, for the Tarrytown Pocket Track/Interlocking. This work would not affect SASSs or SCFWHs and would be within the right-of-way, and is not anticipated to involve coastal impacts.
- To the north, the railroad extends through the **Hudson Highlands SASS** between MPs 40.5 to 57.8. The signal improvements and addition of a third track (between MPs 53 and 63) would not affect the visual quality of this SASS.
- With Alternative 90B, signal improvements proposed along 43 miles (MPs 32.8 and 75.8) extend through urban areas (Westchester and Dutchess Counties). Along this section, 10 miles of new third track (MPs 53 to 63) and improvements at the Poughkeepsie Yard/Storage Facility (MPs 71 to 75.8) are also proposed in Dutchess County. The **Croton River and Bay SCFWH** adjoins or crosses the railroad between MPs 31 to 33.5, and the **Haverstraw Bay SCFWH** adjoins the railroad between MPs 34 and 37. The railroad extends adjacent to or through the **Hudson River Mile 44 to 56 SCFWH** between MPs 42.5 and 54.5. The railroad adjoins the **Constitution Marsh SCFWH**, on the west, between MPs 50.5 to 52.3. The railroad extends through or adjoins the **Fishkill Creek SCFWH** between MPs 57.3 and 57.7. The railroad adjoins or extends through the **Wappinger Creek SCFWH** between MPs 63.8 and 65. The **Poughkeepsie Deepwater Habitat** extends within 200 feet west of the railroad between MPs 67.5 and 79.4. New third track 53 to 53.2 and from 53.5 to 54.5 will adjoin the east side of the **Hudson River Mile 44-56 SCFWH**, but since work would be contained within the right-of-way, impacts to this area are not anticipated. The remaining SCFWHs would not be affected by Alternative 90B improvements, which would be confined to the right-of-way.
- This area extends through the **Estates District SASS**, which extends to the mean high tide line on the eastern shore of the Hudson River between MPs 76.5 and 103.5. The district borders the adjoining **Esopus-Lloyd SASS** (MPs 70 to 87.5) and **Ulster-North SASS** (MPs 95 to 103.5) to the west and including the river. The railroad passes through the **Catskill-Olana SASS** between MPs 87 and 112. Improvements at the Poughkeepsie Yard/Storage Facility (MPs 71 to 75.8) and Rhinecliff Station (MP 89.2), and Hudson Line Reliability Improvements at CPs 82 and 99 (MPs 82 and 99) would extend within the southern SASSs, but should not change the visual quality of these areas.
- The railroad extends through the **Vanderburgh Cove and Shallows SCFWH** between MPs 85 and 87. However, no work is proposed in this area, the Rhinecliff Station improvements are located two miles to the north (MP 89.2). Between MPs 95.3 and 98.3, the railroad extends through the **North and South Tivoli Bays SCFWH**, which is one of four tidal wetland sites federally designated and state-protected as part of the **Hudson River National Estuarine Research Reserve**. Alternative 90B does not involve work at these locations, so no impacts would occur at these SCFWHs. Between MPs 99 and 100, the railroad closely borders on the **Esopus Estuary SCFWH**, extending within 100 feet over a distance of 700 feet. This is in the vicinity of the proposed crossover (CP99 at MPs 98.4 to 98.94) but this work would not extend outside of the right-of-way and is not anticipated to affect the Esopus Estuary SCFWH.

- Between MPs 100.5 to 105.3, the railroad adjoins the eastern side of the **Germantown-Clermont Flats SCFWH**, and rock slope stabilization proposed at five locations from MPs 105.3 to 106 would occur within the right-of-way and is not anticipated to impact coastal impacts. At MP 108, the railroad closely borders the **Roeliff Jansen Kill SCFWH** to the east, and work for Alternative 90B is not anticipated at this location.
- Between MPs 115.3 and 131.5, the railroad extends through the **Columbia-Green North SASS**. Rock slope stabilization proposed at MP 119.5 (one location) and MPs 128.1 to 130 (4 locations) would extend within this SASS, but would not change the scenic quality of the area.
- No work is proposed in the immediate vicinity of the **Mill Creek Wetlands SCFWH** (MPs 125.5 to 127).
- A new crossover, CP 136, is proposed at MP 136, and this work would extend within the **Papscane Marsh and Creek SCFWH** (MPs 135 to 139.3), but is not anticipated to impact the SCFWH.
- The replacement of the Livingston Avenue Bridge (MPs 143.2 to 144) will occur within the coastal zone, but will not affect SCFWHs or SASSs. The disturbance to the coastal zone will be temporary in nature and represents a replacement of an existing structure.

Along Empire Corridor South, coastal zone impacts are not anticipated to occur as this work is expected to be confined to the right-of-way.

Empire Corridor West/Niagara Branch

Alternative 90B improvements include the Livingston Avenue Bridge replacement and the double track along the Niagara Branch, which will both extend within the coastal zone. These impacts are, or were, anticipated to be temporary in nature.

Improvements for Alternative 90B, the Preferred Alternative, are located outside of the coastal zone, with the exception of two track improvements along the Irondequoit Creek and the Niagara River.

- Track improvements for relocated freight track would extend over the **Irondequoit Creek** at MP 362.92. The coastal zone at this crossing includes the **Irondequoit Bay and Creek SCFWH**, and modification or replacement would be required to the existing bridge structure. Work to modify or construct a new bridge over the waterway to accommodate the additional track would be temporary in nature, and since the bridge would span the waterway, no impacts to the coastal zone or coastal habitat area are anticipated.
- The proposed double track along the Niagara Branch (at MPs QDN2 to QDN7) intersects the coastal boundary along the **Niagara River**. These improvements would be located within the right-of-way and would not involve substantial coastal impacts.

4.11.5. Potential Mitigation Strategies

Measures to avoid or minimize impacts on coastal resources and Coastal Special Management Areas will be identified in the Tier 2 assessment, as appropriate, for the Preferred Alternative, Alternative 90B. The proposed program's environmental benefits for the coastal zone include promoting energy-efficient travel and reducing greenhouse gas emissions, which could be considered beneficial from the standpoint of potential future sea level rise. For these reasons, the program would be considered to be consistent with coastal zone management policies.

If required, coastal consistency reviews will be performed to determine how the program complies

with federal, state, regional, and local coastal policies, and appropriate mitigation measures will be identified based on these reviews. Mitigation strategies may include permanent measures, such as providing permanent compensation for visual or coastal impacts. Temporary construction measures, such as time of year fisheries restrictions for silt-producing work within coastal waters or restrictions to avoid navigational impacts, could also be employed. Mitigation measures during construction operations include minimizing damage by debris, sedimentation, and other foreign materials being carried into the coastal waters. Areas of exposed soil would be minimized, and erosion and sediment control items should be implemented as part of Stormwater Pollution Prevention Plans and Erosion and Sediment Control Plans. If appropriate, consultation with the NYSDOS and entities with LWRP or Harbor Management Plans will be performed regarding mitigation measures proposed.

4.11.6. Future Analysis

As discussed above, as applicable, Tier 2 will identify potential impacts to Coastal Special Management Areas for the Preferred Alternative, Alternative 90B, and may include consultation with NYSDOS to identify consistency with coastal policies and issues of concern. For projects within the program that may impact coastal resources, in order to determine state consistency with coastal policies, a State Coastal Assessment Form under Part 600 of Title 19 of the NYCRR may need to be completed and submitted to NYSDOS to assist in making a determination of significance under SEQR.

If applicable, federal consistency review would involve submitting Federal Aid Notification letter to NYSDOS and completing the Federal Consistency Assessment Form, including documenting consistency with state coastal policies and LWRPs (submitting copies of correspondence with/from the LWRP). For the purposes of U.S. ACE permitting, if the program involves a General Permit, the program may be programmatically determined to be consistent with coastal policies of the General Permit. If an individual U.S. ACE or USCG permit is required for work in coastal resources, a Federal Consistency Assessment Form may need to be submitted, along with a completed joint U.S. ACE/NYSDEC Permit Application and/or USCG Bridge Permit application and any required NEPA documentation, and all information and data necessary to assess the effects of the proposed activity on and its consistency with the Coastal Management Program.

If applicable, documentation will also be submitted to potentially affected local municipalities with LWRPs addressing consistency with the LWRPs.

4.12. Aquifers

4.12.1. Regulatory Context

The sole source aquifer program provides federal protection of critical groundwater supplies. The United States Environmental Protection Agency (U.S. EPA) defines a sole source aquifer as an aquifer that supplies at least 50 percent of the drinking water consumed in the area overlying the aquifer. These areas may have no alternative drinking water source(s) that could physically, legally and economically supply all those who depend on the aquifer for drinking water. There are two types of "sole source aquifers" (SSAs) designated sole or principal source aquifers.¹⁰⁰

¹⁰⁰ U.S. EPA Sole Source Aquifer Protection Program (under 1974 Safe Drinking Water Act, Section 1424(e) and 1986 amendments to the Act).

New York State also has a sole source aquifer protection program.¹⁰¹ The purpose and goals of this program are to provide funds for the implementation of groundwater protection plans and protect water quality in designated “special groundwater protection areas.” The program establishes a process for nominating and designating special groundwater protection areas within federally designated sole source aquifer areas contained within counties having a population of one million or more people.

In order to enhance protection of aquifers that are most productive and most vulnerable, the New York State Department of Environmental Conservation (NYSDEC), in cooperation with the United States Geological Survey (USGS), has mapped eighteen primary aquifers throughout the state. Primary aquifers are defined as “*highly productive aquifers presently utilized as sources of water supply by major municipal water supply systems.*” The New York State Department of Environmental Conservation (NYSDEC) believes that all of the primary aquifers in New York State would qualify for designation as federally protected sole source aquifers.¹⁰²

Principal aquifers are “*aquifers known to be highly productive or whose geology suggests abundant potential water supply, but that are not intensively used as sources of water supply by major municipal systems at the present time.*”¹⁰³

4.12.2. Methodology

Groundwater resources for study areas within 300 feet of the corridor centerline for all alternatives were mapped using available GIS information. The New York State Department of Environmental Conservation (NYSDEC), in cooperation with the United States Geological Survey (USGS), has mapped primary aquifers (1:24,000 scale) and is in the process of identifying principal aquifers, or the remainder of the unconsolidated aquifers in New York that are generally capable of providing 10 to 100 or more gallons per minute at 1:24,000 scale.

Due to the large number of aquifers in New York State, the federal-state cooperative mapping program must continue for some time before all principal aquifers have been mapped. In the meantime, for those areas not mapped the NYSDEC Division of Water refers to a series of USGS maps titled “Unconsolidated Aquifers in Upstate New York,” to show potential areas of principal aquifers (1:250,000 scale). Areas mapped as “Unconfined Aquifer 10 to 100 gallons per minute” or “Unconfined Aquifer more than 100 gallons per minute” are generally considered to be principal aquifers unless contradictory site-specific information is made available to the NYSDEC.³

GIS information obtained includes U.S. EPA sole source aquifers (SSA), NYSDEC/USGS primary aquifers (1:24,000 scale), and NYSDEC/USGS unconsolidated aquifers (at 1:250,000 scale) to identify and map principal aquifers within the 300-foot buffer.

4.12.3. Existing Conditions

The Empire Corridor 90/110 Study Area passes over 2.03 square miles of one known SSA: the Schenectady-Niskayuna Aquifer within the 600-foot wide study area. It is approximately 20 miles long and underlies approximately 30 square miles in the lower and easternmost part of the Mohawk

¹⁰¹ New York Environmental Conservation - Article 55 Sole Source Aquifer Protection.

¹⁰² NYSDEC, Sole Source Aquifers, Accessed, October, 20, 2011 <<http://www.dec.ny.gov/lands/36151.html>>.

¹⁰³ NYSDEC, *Primary and Principal Aquifers*, Accessed April 20, 2011 <<http://www.dec.ny.gov/lands/36119.html>>.

River Basin, with a small overlap into the Lower Hudson River Basin. The 125 Study Area also passes over the same SSA; however, it only passes over 0.06 square mile of it.

The 90/110 Study Area passes over a combined 4.75 square miles of five primary aquifers: the Croton-Ossining, Schenectady, Baldwinsville, Irondognessee, and Batvia aquifers. The 125 Study Area passes over a combined 2.67 square miles of three of these primary aquifers: the Croton-Ossining, Baldwinsville and Irondognessee. Principal aquifers also underlie both study areas. There are approximately 15.32 square miles of principal aquifers underlying the 90/110 Study Area and 7.03 square miles underlying the 125 Study Area.

Exhibit 4-15 presents the aquifer areas by county, and Appendix G.11 describes the aquifers in each county.

4.12.4. Environmental Consequences

Comparison of Alternatives

This section below describes anticipated direct and indirect impacts of the program (Alternative 90B, the Preferred Alternative) and other alternatives considered on groundwater resources (see Appendix G.11 for further discussion of other alternatives considered). The Preferred Alternative will involve work in more areas with greater potential for impacts than the Base and 90A Alternatives. The Base Alternative would involve the least impact, with minimal effects on underlying aquifers from the remaining work for the Syracuse Track Configuration project. Alternative 90B would involve work overlying sole source, primary or principal aquifers areas in 9 counties, similar to Alternative 110. Although Alternative 125 would involve work in more areas (13 counties), the area of sole source, principal, and primary aquifers in the 125 Study Area is lower than for both Alternative 90B and Alternative 110.

The proposed addition of third and fourth tracks, particularly in areas where the railbed is already in place would have minimal or no direct impacts on the underlying aquifers or the quantity of groundwater recharge. The addition of ballast for the new tracks would be considered pervious to infiltrating stormwaters. There may be a slightly increased potential for contaminants reaching the underlying aquifer with increased train traffic on the new tracks, however this would be considered to be a minimal effect. Any proposed structures that would require substantial excavations would have a higher potential to directly impact existing groundwater resources. These actions may include construction of new stations, extension of platforms, bridge construction, and other similar activities.

In general, actions that would constitute impacts on groundwater would include deep excavations that may intersect the groundwater table and/or any increase in impervious surfaces (construction of foundations, placement of compacted fill or impervious pavement), which could reduce infiltration rates of recharge efficiency. Actions that may result in the release of contaminants as a result of construction or operation may also affect the underlying aquifers and potentially drinking water supplies. Any changes in groundwater level near perennial streams, wells or mines may potentially cause a long-term impact to the underlying aquifers. Short-term impacts related to construction are discussed in Section 4.25.3.

Exhibit 4-15—Federal Sole Source and State Primary/Principal Aquifers in the Study Area

County	Aquifer Area within 600-foot wide Study Area (Square Miles)					
	Sole-Source (Schenectady-Niskayuna)		Primary Aquifers (Aquifer Name)		Principal Aquifers (Mapped)	
	90/110 Study Area	125 Study Area	90/110 Study Area	125 Study Area	90/110 Study Area	125 Study Area
New York	-	-	-	-	-	-
Bronx	-	-	-	-	-	-
Westchester	-	-	0.26 (Croton-Ossining)	0.26 (Croton-Ossining)	0.03	0.03
Putnam	-	-	-	-	0.09	0.09
Dutchess	-	-	-	-	0.03	0.03
Columbia	-	-	-	-	0.41	0.41
Rensselaer	-	-	-	-	0.80	0.83
Albany	0.43	0.06	-	-	0.93	1.23
Schenectady	1.60	-	1.29 (Schenectady)	-	0.30	0.59
Schoharie	-	-	-	-	-	0.33
Montgomery	-	-	-	-	4.47	0.41
Herkimer	-	-	-	-	2.70	0.73
Oneida	-	-	-	-	1.83	0.47
Madison	-	-	-	-	-	0.10
Onondaga	-	-	1.95 (Baldwinsville)	1.52 (Baldwinsville)	0.20	0.02
Cayuga	-	-	-	-	0.71	0.23
Wayne	-	-	-	0.02 (Iron-ton- genessee)	2.41	0.84
Monroe	-	-	0.88 (Iron-ton- genessee)	0.87 (Iron-ton- genessee)	0.37	0.29
Genesee	-	-	0.37 (Batvia)	-	-	0.12
Erie	-	-	-	-	0.04	0.28
Niagara	-	-	-	-	-	-
TOTAL	2.03	0.06	4.75	2.67	15.32	7.03

Note: The 90/110 Study Area is used for analysis of Alternatives 90A, 90B, and 110 and consists of the existing 464-mile long Empire Corridor alignment. The 125 Study Area is used for analysis of Alternative 125 and consists of portions of the existing Empire Corridor and new alignment and is 450 miles long. The study area width is defined as being within 300 feet of the corridor centerline.

Sources: 1) U.S. EPA, *Sole_Source_Aquifers.shp*, 2011; 2) NYSDEC, *primary_aquifers.shp*, 2011; 3) NYSDEC, *Unconsolidated Aquifers at 1:250,000*, 2011; 4) New York State Division of Water, *Water Wells.shp*, 2011.

Alternative 90B (Preferred Alternative)***Empire Corridor South***

The impacts of the Preferred Alternative include impacts from the following Alternative 90A projects, since Alternative 90A projects are included as part of Alternative 90B. With Alternative 90B, improvements would primarily occur within the existing right-of-way, and would likely not include a change to the existing water quality and impervious surfaces; therefore, the proposed improvements would have minimal direct and/or indirect impacts to the identified aquifers in these areas. Work in the vicinity of identified primary or principal aquifers includes the following.

- With Alternative 90B, signal improvements proposed along 43 miles (MPs 32.8 and 75.8) in would pass over the Croton-Ossining Primary Aquifer (MPs 32 to 35), as well as principal aquifers located north of Peekskill in Westchester County (MPs 41 to 43), south of Cold Spring in Putnam County (MPs 51 to 52), and south of New Hamburg in Dutchess County (MP 65).
- North of Poughkeepsie and south of Albany-Rensselaer Station (MPs 75.8 to 140), proposed improvements would include rock slope stabilization (MPs 105 to 130) and three new control points (CP 82, CP 99, and CP 136), as well as station improvements at Rhinecliff Station (MP 89) and Hudson Station (MP 113). New York State principal aquifers would underlie three small areas along this segment of track (near MPs 108, 111, and 135). The area underlying the Hudson River is designated as a New York State principal aquifer, and portions of the track would pass over, or would be located immediately adjacent to, the aquifer. Although proposed improvements such as rock slope stabilization may potentially increase impervious surfaces, depending on the design, this would have minimal or no impacts on underlying aquifers.
- In addition, Alternative 90B would include the replacement of the Livingston Avenue Bridge, which would extend over the Hudson River between the cities of Rensselaer and Albany. The area underlying the Hudson River is designated as a New York State principal aquifer. Depending on the construction and excavation depths and the design of the proposed bridge replacement, associated construction activities in this area would have the potential to directly and/or indirectly impact the aquifer, but these impacts would be temporary in nature.

Empire Corridor West/Niagara Branch

Alternative 90A improvements included in the Preferred Alternative include work over the following aquifer areas, since Alternative 90A projects are included as part of Alternative 90B. Proposed improvements would primarily occur within the existing right-of-way, and would not likely include a change to the existing water quality and impervious surfaces.

- With Alternative 90B, track improvements would include approximately 10 miles of third track between MPs 169 and 178.5, and Amsterdam Station improvements along the west end of this segment. MP 169 is located on the westernmost edge of the Schenectady Primary Aquifer; the remainder of the segment, including the Amsterdam Station, would be generally located within a principal aquifer that generally underlies the Mohawk River. Adding rail ties and ballast for the new track would involve minimal impacts to underlying aquifers, as the ballast is pervious; therefore, the proposed improvements would have minimal direct and/or indirect impacts to the above-mentioned primary and principal aquifers.
- Upgrades to interlockings and automatic block signals would also occur at three control points in the Cities of Amsterdam, Utica, and Rome (CP 175, CP 239, and CP 248, respectively). The control points would be located within the boundaries of the principal aquifer, which would generally underlie the Mohawk River.

- Alternative 90B would include Syracuse Station track improvements (MPs 290 to 294), Rochester Station track and platform improvements (MPs 368 to 373), and third track improvements along 11 miles (MPs 373 to 382) west of the station. Where the railroad enters the City of Syracuse, it would pass over the Baldwinsville Primary Aquifer. Adding rail ties and even ballast for the new track would involve minimal impacts to underlying aquifers. Depending on the construction and excavation depths associated with the proposed station and platform improvements, station improvements could have the potential to minimally impact the Baldwinsville Primary Aquifer. The improvements in the City of Rochester west of the station, including the addition of a third track along 11 miles located largely west of the City of Rochester (MPs 382 to 393) and extending into Genesee County would not be located over an aquifer; therefore, impacts would not be anticipated in this area.

The third and fourth track improvements for Alternative 90B would include work over the following aquifer areas. Adding rail ties and ballast for the new track would involve minimal impacts to underlying aquifers, since the ballast is pervious; therefore, the proposed improvements would have minimal direct and/or indirect impacts to the aquifers.

- In Schenectady County, the proposed new track construction for the Preferred Alternative, Alternative 90B, would occur between MP 159 and MP 167, extending from the City of Schenectady to the west. In addition, proposed improvements would occur at the Schenectady Station (MP 159), and a larger track shift, is proposed for the westernmost part of the county (MP 168). All of the proposed improvements would occur above two aquifer types: the Schenectady-Niskayuna SSA and the Schenectady Primary Aquifer.
- Within Montgomery, Herkimer and Oneida counties, there would be new track additions throughout the county. In addition, proposed station improvements would occur at the Amsterdam Station. The majority of the alignment in these counties would be underlain or immediately adjacent to principal aquifers that generally underlie the Mohawk River.
- Within Onondaga County the proposed new track construction and proposed improvements at the Syracuse Station (MPs 290 to 294) would occur in areas underlain by the Baldwinsville Primary Aquifer (MPs 290 to 307) and principal aquifers (MPs 307 to 309).
- In Cayuga and Wayne counties, the proposed new track construction would pass over areas underlain by principal aquifers on the eastern portion of Cayuga County (MPs 309 to 315) and principal aquifers associated with the Ganargua Creek and nearby tributaries to the Erie Canal (MPs 332 to 337 and 340 to 357) in Wayne County.
- Within Monroe County, the proposed new track construction would extend through areas underlain by the Irondegenessee Primary Aquifer on the eastern portion of the county (scattered in and around MPs 358 to 367). In addition, principal aquifers would underlay the alignment on the eastern portion of the county (MPs 357 to 360). Improvements at the Rochester Station (MPs 368 to 373), would occur to the west of the identified aquifers; therefore, no impacts would be anticipated in this area.
- In Genesee County, the proposed new track construction would extend through areas underlain by the Batavia Primary Aquifer (MPs 401 to 405); no other aquifers underlay the alignment in this county.
- In Erie County, the proposed third track construction along Empire Corridor West and the double tracking along the Niagara Branch (between MPs QDN2 and QDN7) would not be underlain by a principal aquifer and impacts would not be anticipated.

4.12.5. Potential Mitigation Strategies

To the extent appropriate, project development and design will incorporate measures to minimize and/or avoid impacts to water quality and recharge of underlying aquifers. To comply with state water quality standards (i.e., 6 NYCRR Part 703), NYSDOT will identify and incorporate, as appropriate, Stormwater Pollution Prevention Plans (SWPPPs) prepared in accordance with the NYSDEC State Pollutant Discharge Elimination System (SPDES) permit program or Erosion and Sediment Control (ESC) Plans. Application of BMPs as defined in the SWPPPs or ESC plans will reduce the amount of erosion and sedimentation resulting from construction activities. BMPs could include centralized refueling, storing absorbent material and booms on-site, and locating portable fuel tanks in upland sites on a low permeability substrate.

4.12.6. Future Analysis

The proposed activities may not require further groundwater assessments, based on the activities proposed, which would involve minimal impacts on groundwater quality or recharge of the underlying aquifers. During the Tier 2 analysis, program impact assessments based on design of Alternative 90B, the Preferred Alternative, and site-specific mapping will be prepared. If a project is federally funded and will impact a Sole Source Aquifer, federal review and/or approval is required pursuant to Section 1424(e) of the U.S. Safe Drinking Water Act is required. If a Section 1424(e) review is required, NYSDOT would prepare a Groundwater Assessment Report, which would be included in the Tier 2 Draft Design Approval Document and program NEPA document(s).

To comply with state law, the NYSDOT must document whether a project would adversely affect a NYSDEC designated primary aquifer, principal aquifer, or drinking water supply sources (e.g., reservoirs, wells, etc.). Tier 2 will include additional research to identify and document water supplies potentially affected by individual projects constructed as part of the Preferred Alternative, Alternative 90B, as appropriate.

4.13. General Ecology and Wildlife Resources

4.13.1. Regulatory Context

Wildlife and aquatic habitats are protected under several regulatory programs at the federal and state level. The U.S. Endangered Species Act prohibits the “take” of any plant or animal species listed as endangered or threatened under this act, or their designated critical habitat. Section 7 of the Act requires consultation for actions that may affect listed species or their designated habitats with the U.S. Fish and Wildlife Service (U.S. FWS) (for freshwater and wildlife) and National Marine Fisheries Service (NMFS) (for marine and anadromous species).¹⁰⁴

State protection of listed species is provided under New York State Environmental Conservation Law (ECL) Title 5-11-0535 Endangered and Threatened Species and Title 15-9-1503 Removal of Protected Plants and corresponding regulations.¹⁰⁵

Provisions in the U.S. Magnuson-Stevens Fisheries Conservation and Management Act require the NMFS to identify and protect important habitats of federally managed marine and anadromous fish

¹⁰⁴ United States Endangered Species Act (16 United States Code [U.S.C.] 1531-1543).

¹⁰⁵ 6 NYCRR Part 182 (Environmental Conservation Law—Endangered and Threatened Species) and Part 193 (Protected Native Plants)

species, or Essential Fish Habitat (EFH). Federal agencies that fund, permit, or undertake activities that may adversely affect EFH are required to consult with the NMFS regarding the potential effects of their actions on EFH.

The ecological and environmental inventory and evaluation considered the impacts of program activities on the environment and are consistent with the approach to environmental impact assessments as described in the Council on Environmental Quality (CEQ) report, *Incorporating Biodiversity Considerations into Environmental Impact Analysis under the National Environmental Policy Act (NEPA)* and Federal Railroad Administration (FRA) Procedures for Considering Environmental Impacts (65 Federal Register [FR] 28545). This ecological assessment also was performed in accordance with the NYSDOT Environmental Manual (TEM), which provides guidance and restrictions for planning and designing applicable highway projects.

Protection of migratory birds is also provided under U.S. FWS Migratory Bird Treaty Act of 1918, which prohibits, unless permitted by regulations, the “take” of any migratory bird.¹⁰⁶ The Federal Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d) provides for the protection of bald and golden eagles. State legislation establishing the Bird Conservation Area (BCA) program was enacted on September 5, 1997 to safeguard and enhance populations of native wild birds and habitats that birds are dependent upon on state-owned lands and waters.

4.13.2. Methodology

The U.S. FWS, the NYSDEC, and the New York Natural Heritage Program provided information on ecological habitat and endangered and threatened species for study areas within a half-mile of the corridor centerline for all alternatives. Information from the U.S. FWS and NYSDEC on federal and state listing status and occurrences by county were consulted. The U.S. FWS IPaC report is incorporated in Appendix I (Agency Correspondence), but largely incorporates the data from the state GIS, which provided a comprehensive GIS database of federally and state-protected species locations. The New York Natural Heritage Program applies species-specific screening distances, so the half-mile buffer also included locations within:

- a one-mile buffer around bald eagle nests,
- 0.81 mile of Blanding’s turtle locations,
- 1.5 miles of timber rattlesnake locations,
- 2.5 miles of Indiana bat locations,
- 1.5 miles of non-wintering northern long-eared bat locations,
- 5 miles of northern long-eared bat hibernacula.

While the documented locations of these species are often not within the half-mile buffer, these species regularly travel these respective distances and may potentially occur in the portions of the half-mile buffers. The detailed species listings in Exhibits G-18 and G-19 in Appendix G.12 denotes those species with the buffer zones that intersected the mile-wide study area, as described above. In addition, these exhibits in Appendix G.12 also identifies those species with potential occurrences (i.e., historical records before 1980, or precise locations not known, or recent presence not confirmed).

The Information for Planning and Consultation (IPaC) Online System was also utilized to determine threatened, endangered, proposed and candidate species, as well as proposed and final designated

¹⁰⁶ Migratory Bird Treaty Act of 1918 (MBTA), (16 U.S.C. 703–712).

critical habitat that may occur within the boundary of the proposed project. The official species list (Appendix I) generated through the IPaC, fulfills the requirements of the U.S. Fish and Wildlife Service under Section 7(c) of the Endangered Species Act of 1973, as amended (16 U.S.C 1531 et seq.). The results from the IPaC have been included in the subsequent narrative.

The National Marine Fisheries Habitat Conservation Division for the Northeastern U.S. *Guide to Essential Fish Habitat Designations* and *Guide to Essential Fish Habitat Descriptions* for the Hudson River was consulted to identify EFH. GIS information obtained included NYSDEC mapping of ecological zones and New York Natural Heritage Program mapping of occurrences of listed species. Digital data from NYSDEC consulted included mapping of significant natural communities.¹⁰⁷ NYSDEC GIS mapping for designated bird conservation areas was also consulted.

4.13.3. Existing Conditions

This section discusses the documented occurrences and likelihood of occurrences for federally and state-endangered/threatened species in each study area, along with documented occurrences of NYNHP-designated Natural Heritage Areas and significant natural communities within a half-mile of the corridor centerlines. The EFHs protected under the Magnuson-Stevens Fisheries Conservation and Management Act, state-protected Bird Conservation Areas on public lands, and other ecologically significant areas (such as National Natural Landmarks) within a half-mile of the corridor centerline are also covered. Appendix G.12 presents additional information on ecological zones and these protected species and habitats and their occurrences in the study area.

Threatened and Endangered Species

Upon consultation with the resource agencies, 72 federally and/or state-endangered or threatened plant and wildlife species were documented as occurring in the vicinity of the Empire Corridor (90/110 Study Area) and 86 species in the vicinity of the 125 Study Area. Exhibits G-18 and G-19 of Appendix G.12 presents the list of federally and state-endangered and threatened species documented or suspected to potentially occur within the one-mile-wide study area for both the 90/110 mph and the 125 mph study areas. The species protective status and county of known occurrence for both study areas are included in Exhibit 4-16 and Exhibit 4-17, along with a summary of the number of species occurrences by county.

Of the 72 species in the 90/110 Study Area, two are mammals, three are fish species, ten are birds, five are reptiles, two are invertebrates, and the vast majority (50) are plants. There are 7 federally listed endangered or threatened species, and 70 state-listed species.

Of the 87 species in the 125 Study Area, two are mammals, three are fish species, nine are birds, seven are reptiles, two are invertebrates, and the remainder (64) are plants. There are 8 federally listed endangered or threatened species, and 85 state-listed species.

There are four federally endangered species in the study area: shortnose sturgeon (*Acipenser brevirostrum*), Atlantic sturgeon (*Acipenser oxyrinchus*), Indiana bat (*Myotis sodalis*), and Karner blue (*Lycaeides melissa samuelis*). The Hudson River provides habitat for federally protected species in all Empire Corridor South counties between New York and Albany. The NMFS, in correspondence received March 28, 2014, has identified the presence of federally endangered shortnose sturgeon between upper Staten Island and the Troy Lock and Dam. The New York Bight Distinct Population

¹⁰⁷ NYSDEC, GeoData Inventory: <<http://www.dec.ny.gov/geodata/>>.

Segment of Atlantic sturgeon was listed under the U.S. Endangered Species Act on February 6, 2012¹⁰⁸ and is also documented in the Hudson River. The NMFS correspondence identifies the presence of migratory and spawning habitat for Atlantic sturgeon within the river, with seasonal changes in occurrence, and the highest likelihood of occurrences in the area from May through September. According to the NYSDEC website, in New York, Atlantic sturgeon is generally found in the deeper portions of the Hudson River.¹⁰⁹ The northern long-eared bat (*Myotis septentrionalis*) was listed as federally threatened on April 2, 2015. Although this species occurred in all counties (but New York City) prior to 2006,¹¹⁰ declines caused by white-nose syndrome have reduced documented occurrences of this species to roughly half of the study area counties, although the USFWS lists all study area counties as within the range of this species.¹¹¹

Exhibit 4-16 and Exhibit 4-17 summarize the numbers of endangered and threatened species occurrences within a half-mile of the corridor centerline. The species protective status and county of known occurrence for both study areas are included in these exhibits, along with a summary of the number of species occurrences by county.

Essential Fish Habitat

The NMFS has designated eleven species of fish as EFH in the study area. Appendix G.12 shows species for which NMFS has designated an EFH and the life stage that has the potential to be found in the study area.

EFH species in the study area from New York to Greene Counties include summer flounder (*Paralichthys dentatus*), red hake (*Urophycis chuss*), winter flounder (*Pseudopleuronectes americanus*), windowpane flounder (*Scophthalmus aquosus*), Atlantic sea herring (*Clupea harengus*), bluefish (*Pomatomus saltatrix*), Atlantic butterflyfish (*Peprilus triacanthus*), clearnose skate (*Raja eglanteria*), little skate (*Leucoraja erinacea*), longfin inshore squid (*Doryteuthis peagleii*), and winter skate (*Leucoraja ocellata*).

Natural Heritage Areas/Significant Natural Communities

The only designated Natural Heritage Area in the study area is the Tivoli Bays. In 2007, the Tivoli Bays was designated by NYSDEC as the first Natural Heritage Area in New York State.¹¹² The designation of the Tivoli Bays Natural Heritage Area made the protection of rare plants, fauna, and natural habitats a key management priority of the site.

The NYNHP maintains a comprehensive database on the status and location of natural communities in New York State. The NYNHP considers “significant” natural communities to be those that are rare in New York State or that are “outstanding” examples of more common communities. Presently, 174 natural community types are monitored throughout the state. Of these, 69 communities are located in the existing Empire Corridor (90/110 Study Area) and 92 communities are located in the 125 Study Area. Appendix G.12 shows the known distribution of significant natural communities located

¹⁰⁸ NMFS, “Endangered and Threatened Wildlife and Plants; Threatened and Endangered Status for Distinct Population Segments of Atlantic Sturgeon in the Northeast Region,” Federal Register/Vol. 77, No. 24, 50 CFR Parts 223 and 224. February 6, 2012.

¹⁰⁹ NYSDEC, “New York Sturgeon,” Accessed October 27, 2011. <<http://www.dec.ny.gov/animals/7025.html>>

¹¹⁰ NYSDEC, “Northern Long-eared Bat Occurrences by Town,” May5, 2016. <http://www.dec.ny.gov/docs/wildlife_pdf/nlebtowns.pdf>

¹¹¹ USFWS, “Northern Long-eared Bat Range Map/Counties in Long-eared Bat Range,” updated March 29, 2017. <<https://www.fws.gov/Midwest/endangered/mammals/nleb/nlebRangeMap.html>>

¹¹² NOAA, Hudson River National Estuarine Research Reserve: Revised Management Plan, 2009-2014. Accessed January 12, 2011. <http://www.dec.ny.gov/docs/remediation_hudson_pdf/hrnerrmpall.pdf>

in the vicinity of the study area.

Exhibit 4-16—Federally and State Endangered-Threatened Species Occurrences in the 90/110 Study Area

County	Federal Status		State Status	
	Endangered	Threatened	Endangered	Threatened
New York	2	0	3	1
Bronx	2	0	1	0
Westchester	2	2	5	12
Rockland	2	1	2	5
Putnam	2	1	3	12
Orange	3	1	3	7
Dutchess	3	1	7	20
Ulster	3	1	1	5
Columbia	3	1	5	13
Greene	2	1	4	8
Rensselaer	2	0	2	3
Albany	3	0	4	3
Schenectady	1	0	2	1
Montgomery	0	1	1	3
Herkimer	0	0	0	1
Oneida	0	0	1	5
Madison	0	0	0	3
Onondaga	1	1	2	4
Cayuga	1	0	3	5
Wayne	1	0	3	5
Monroe	0	0	2	3
Genesee	1	0	1	1
Erie	0	1	1	5
Niagara	0	0	2	6

Note: The 90/110 Study Area is used for analysis of Alternatives 90A, 90B, and 110 and consists of the existing 464-mile long Empire Corridor alignment. The study area width is defined as being within a half-mile of the corridor centerline. Totals include occurrences for species-specific screening distances for NYNHP within the ½ mile study buffer (1 mile around bald eagle nests, 0.81 mile of Blanding's turtle locations, 1.5 miles of timber rattlesnake locations, 2.5 miles from Indiana bat locations, 1.5 miles of non-wintering northern long-eared bat locations and 5 miles from NLEB hibernacula). Totals also include species last documented before 1980 (historical records), or for which relatively precise locations or recent occurrences are not known or confirmed.

Sources: U.S.FWS, 2011, 2017; NYSDEC, New York Natural Heritage Program, 2021

Exhibit 4-17—Federally and State Endangered-Threatened Species Occurrences in the 125 Study Area

County	Federal Status		State Status	
	Endangered	Threatened	Endangered	Threatened
New York	2	0	3	1
Bronx	2	0	1	0
Westchester	2	2	5	12
Rockland	2	1	2	5
Putnam	2	1	3	11
Orange	3	1	4	6
Dutchess	3	1	8	20
Ulster	3	1	2	4
Columbia	3	1	4	14
Greene	2	1	4	8
Rensselaer	2	0	2	3
Albany	3	0	4	5
Schenectady	1	0	1	0
Schoharie	0	0	0	0
Montgomery	0	0	1	1
Herkimer	0	0	0	2
Oneida	0	0	0	1
Madison	0	0	0	5
Onondaga	1	1	2	5
Cayuga	0	0	0	4
Wayne	0	0	0	1
Monroe	0	0	2	2
Genesee	1	1	6	8
Erie	0	0	2	5
Niagara	0	0	2	6

Note: The 125 Study Area is used for analysis of Alternative 125 and consists of portions of the existing Empire Corridor and new alignment and is 450 miles long. The study area width is defined as being within a half-mile of the corridor centerline. Totals include occurrences for species-specific screening distances for NYNHP within the ½ mile study buffer (1 mile around bald eagle nests, 0.81 mile of Blanding's turtle locations, 1.5 miles of timber rattlesnake locations, 2.5 miles from Indiana bat locations, 1.5 miles of non-wintering northern long-eared bat locations and 5 miles from NLEB hibernacula). Totals also include species last documented before 1980 (historical records), or for which relatively precise locations or recent occurrences are not known or confirmed.

Sources: U.S.FWS, 2011, 2017; NYSDEC, New York Natural Heritage Program, 2021.

Bird Conservation Areas

There are six bird conservation areas located in both study areas:

- Iona Island/Doodletown bird conservation area in Rockland County
- Constitution Marsh in Putnam County on the east shore of the Hudson River
- Tivoli Bay in Dutchess County ¹¹³
- Schodack Island State Park in Rensselaer County
- Albany Pine Bush Preserve

¹¹³ NYSDEC. "DEC Lands," Accessed June 2011. <<http://www.dec.ny.gov/lands/4915.html>>

- The Montezuma Wetlands Complex in Wayne County and Cayuga County.¹¹⁴

Other Conservation and Ecologically Significant Areas

Other ecological habitats include:

- **Significant Coastal Fish and Wildlife Habitats** designated under the state coastal program: As part of the state's coastal program, 31 Significant Coastal Fish and Wildlife Habitats within a half-mile of the corridor centerline have been designated for protection. These designated areas are addressed in Section 4.11 and Appendix G.10.
- **Critical Environmental Areas designated for protection under the State Environmental Quality Review Act:** The five SEQR Critical Environmental Areas within the study area are addressed in Section 4.14.
- **Publicly Owned and Non-profit Parks:** Of particular note, the **Albany Pine Bush Preserve**, identified in Section 4.16, Parks and Recreation section, is a known area of conservation concern. This area's ecological significance, location within the Empire Corridor study areas, and legal protection, is of particular note. There are approximately 3,631 acres of the preserve located in Albany County within the one-mile-wide existing Empire Corridor (90/110 Study Area); there are approximately 3,984 acres of the preserve within the 125 Study Area. The two Empire Corridor study areas both cross the preserve roughly between the northeastern edge of the City of Albany to the county line with Schenectady.
- **National Natural Landmarks:** There are three properties with National Natural Landmark (NNL) status within a half-mile of the Empire Corridor (90/110 Study Area) corridor centerline, including the **Albany Pine Bush Preserve** in Albany County, **Iona Island** in Rockland County (both described above), and **Moss Island** in Herkimer County. Approximately 252 acres of state-owned Iona Island is a designated NNL based on the island's estuarine habitat and presence of rare plants. The state-owned Moss Island in the Mohawk River is considered to have excellent examples of glacially-influenced hydrology and geology.

In addition to the Iona Island NNL mentioned above, **Bergen-Byron Swamp** in Genesee County is a NNL within the 125 Study Area. Bergen Swamp and other lands privately held by the Bergen Swamp Preservation Society (BSPS) encompass approximately 3,000 acres in northeastern Genesee County. The BSPS land is actively managed for ecological preservation, education, and science and the property supports a number of known populations of threatened and endangered plant and wildlife species.¹¹⁵

4.13.4. Environmental Consequences

Comparison of Alternatives

The section below identifies elements of the Preferred Alternative that have the potential to impact ecological resources, including threatened and endangered plants and animals, avian species protected under the Migratory Bird Treaty Act (MBTA), EFH, NNLs, bird conservation areas, significant natural communities, and other ecologically significant areas. Appendix G.12 addresses the potential ecological impacts of each of the other alternatives considered. Actions associated with

¹¹⁴ NYSDEC, "DEC Lands," Accessed June 2011. <<http://www.dec.ny.gov/lands/25341.html>>

¹¹⁵ Bergen Swamp Preservation Society. Website homepage. Website accessed January 2012. Available: <<http://www.bergenswamp.org/>>

each alternative such as direct disturbance of terrestrial habitat, waterway crossings, increased frequency of train trips, and higher operating speeds would all have the potential to impact plant or wildlife species or natural habitats. Both the long-term operation and program construction may involve potential for habitat impacts, including permanent displacements and short-term disturbances to wildlife and vegetation populations. Sections 4.11, 4.14, and 4.16 describe the wildlife habitats and corridors present within the coastal resources, Critical Areas protected under the SEQR Act, and parklands that could be potentially affected by the program.

The Base Alternative would involve the least impact on ecological resources. All of the Build Alternatives would affect EFH and aquatic habitats for the Livingston Avenue Bridge replacement. Along Empire Corridor West, Alternative 90A would involve the least impact of the Build Alternatives, with the potential for vegetation removal at least two locations. The Preferred Alternative, Alternative 90B, would involve potential for impacts at more than seven locations, including NNLs/bird conservation area, eight significant natural communities, and would affect areas with documented occurrences of more than 46 protected resources/species. The Preferred Alternative would have lesser impacts than Alternatives 110 and 125. Alternative 110 would have the potential for impacts at more than 21 locations, including two NNLs, bird conservation area, eight significant natural communities, and would affect areas with documented occurrences of more than 46 protected resources/species. Alternative 125 would involve the greatest potential for impacts, with a new rail corridor affecting two NNLs, six bird conservation areas, 92 significant natural communities, and areas with documented occurrences of 86 protected resources/species.

Potential long-term habitat impacts and fragmentation can result from clearing and vegetation removal, although the trackage to be added along the Empire Corridor may largely be located within previously disturbed rights-of-way and would represent an incremental increase over existing conditions. Short-term impacts related to construction are discussed in Section 4.25.3.

This preliminary assessment of potential impacts to native habitats and both protected and common plant and wildlife species is based on Tier 1 concepts and mapping and will be further refined in Tier 2. As the project development process advances on the Preferred Alternative, Alternative 90B, efforts to avoid impacts to ecological resources will be made when designs are further developed.

Alternative 90B (Preferred Alternative)

Due to the increase in track construction outside of the right-of-way for Alternative 90B, habitat encroachment would be more likely to occur with the Preferred Alternative, Alternative 90B, than for Alternative 90A. There are also a higher number of protected resources with a moderate or high potential for occurrence within a half-mile of the areas where new track and roads are proposed, and therefore Alternative 90B would have a higher potential to impact protected species and habitats, compared to Alternative 90A. Additional station improvements proposed under this alternative would be located within existing building and track infrastructure and would not likely impact ecological resources.

Empire Corridor South

The impacts of the Preferred Alternative include impacts from the following Alternative 90A projects. Work proposed for Alternative 90B includes construction in close proximity to the Hudson River, which hosts both federally and state-listed species and EFH, and other ecologically significant sites. However, work in these areas would occur within the existing right-of-way thereby minimizing the potential for ecological impacts.

- For Alternative 90B, there are several records of sensitive species and EFH primarily in the Hudson River within a half-mile of the four miles of second track through Manhattan (SRP-1, MPs 9 to 13), and 1.4 miles of new track under the Tappan Zee Bridge (SRP-2) for the Tarrytown Pocket Track/Interlocking. Construction could affect aquatic species if construction work is conducted within or indirectly affects the Hudson River.
- Ten miles of new third track (SRP-3, MPs 53 to 63) would be installed within or adjacent to a bird conservation area and areas of known occurrences of significant natural communities and protected plant and wildlife populations.
- Improvements at the Poughkeepsie Yard/Storage Facility (ES-13, MPs 71 to 75.8) and rock slope stabilization north of the Poughkeepsie station (ES-04, five locations between MPs 105.3 to 130, one location at MP 119, and four locations at MPs 128.1-130) would include work in areas where there is a potential for protected species and significant natural communities to occur within a half-mile of the corridor centerline.
- In addition, rock slope stabilization near MP 130 would include work near the Shodack Island bird conservation area. Work in the above-mentioned areas that may involve tree clearing or disturbance of terrestrial or aquatic habitats may impact nesting bird habitat, protected species or significant natural communities, and any work conducted over or directly adjacent to the Hudson River would have the potential to impact aquatic resources.
- Alternative 90B would include the replacement of the Livingston Avenue Bridge (ES-15) over the Hudson River. There are records of protected resources at this location, and work there would have the potential to impact EFH, protected aquatic species, or other aquatic habitat through temporary or permanent direct habitat disturbance.

Empire Corridor West/Niagara Branch

Alternative 90A improvements included in the Preferred Alternative includes track improvements, that may involve clearing of vegetation. However, any vegetation removal would have the potential to impact terrestrial habitat, such as nesting birds.

- Improvements proposed include 10 miles of third track between MPs 169 and 179 (EW-14a), and installation of a third track and access road at approximately MP 167. There is one known population of a protected resource (state-threatened species) with a potential for occurrence within a half-mile of the corridor centerline along this stretch of tracks.
- Alternative 90B would include Syracuse Station track improvements (EIS-6, MPs 290 to 294), addition of a third track along 11 miles located largely west of the designated urban area around Rochester (EW-20, MPs 382 to 393), and third track improvements along 11 miles (EW-16, MPs 373 to 382) west of the station. These are primarily urban areas, and there are four known occurrences of state-listed species (including one federally/state endangered species) and one potential/historic (pre-1980) occurrence of a state-endangered species within a half-mile of the corridor centerline at the proposed work locations. Additionally, these sections of railroad would extend in close proximity to Riga Swamp and the Three Rivers Wildlife Management Area/Three Mile Bay WMA.
- Station improvements at the Buffalo-Depew Station (EIS-10, MPs 429 to 433) would involve potential disturbance to vegetated areas within the current station footprint. Although there are no known occurrences of protected plant, wildlife or habitats in these areas, this work could impact habitats through the removal of vegetation. Double track (EW-17, MPs QDN17 to QDN23.2) along the Niagara Branch and Niagara Falls Maintenance Facility and track improvements (EW-18 and EIS-12, MPs 25 to 28) would not involve work outside of the existing

right-of-way, and, therefore, impacts to ecological resources would be unlikely. However, in areas adjoining the right-of-way, sightings of two species of state-listed birds have occurred at one location.

For Alternative 90B, a dedicated third track is proposed between MP 159 in Schenectady County to MP 432 in Erie County. In addition to the resources identified in track segments involving work for a fourth track, there are approximately 28 species with a potential to occur within a half-mile of the corridor centerline.

- In areas identified for a dedicated fourth track and possible access roads (MPs 170 to 179, 204 to 216, 235 to 239, 301 to 309, and 375 to 383), Moss Island, a NNL, and five records of protected resources, are located within a half-mile of the corridor centerline.
- Furthermore, Montezuma Marsh (a NNL and bird conservation area), and nine significant natural communities occur between MP 159 and MP 432. Work within these portions of the Empire Corridor could impact these ecological resources through actions that could result in habitat conversion or habitat disturbance.
- Areas proposed for road realignment or property acquisition at MP 192 would be within less than a half-mile of known occurrences of sensitive resources, and thus would have the potential to impact these resources through habitat disturbance.

Other areas proposed for road realignment or property acquisition under this alternative would not be in the vicinity of sensitive resource occurrences, however any vegetation removal has the potential to impact habitat for wildlife such as birds.

4.13.5. Potential Mitigation Strategies

To the extent practicable, future planning and designs for the Preferred Alternative, Alternative 90B, will incorporate avoidance and minimization of impacts to known protected ecological resources. Where avoidance and minimization are not practicable, mitigation for impacts to protected ecological resources may include:

- Utilization of construction timing windows to avoid disturbance to nesting birds or certain seasonal processes;
- Implementation of construction Best Management Practices;
- Construction of safe wildlife crossings and fencing; or
- Preservation, restoration or rehabilitation of on- or off-site lands.

For work within the Hudson River, NMFS recommends that no in-water work be undertaken from March 1st through June 30th. In the event that this timeframe cannot be avoided, NMFS recommends additional mitigation to minimize shortnose sturgeon impacts include: use of a soft start, use of a vibratory hammer and other Best Management Practices to minimize exposure to elevated levels of noise.

Protected species within the study area include the northern long-eared bat, which live underground during the hibernation season (between November 1st to March 31st in most of the towns in which it occurs in New York), when tree removal will pose the least threat.

For any program element that would require an incidental take permit from a resource agency, mitigation measures to offset any impacts or take must be developed in a mitigation plan. Program-wide and species- or habitat-specific mitigation strategies can be developed with the resource

agencies through the permit review process, and mitigation activities can often be combined for multiple species.

4.13.6. Future Analysis

The Tier 2 assessments will refine the impact assessment based on design of the Alternative 90B (the Preferred Alternative). If project activities may affect protected resources, consultation may be required with:

- the U.S.FWS under Section 7 of the U.S. Endangered Species Act,
- the NYSDEC through Environmental Conservation Law (ECL) Article 9 (for plants) or Article 11 (for fish and wildlife),
- the NMFS under Section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act for potential impacts to EFH.

If required, species surveys would be focused on areas where a potential for impact has been identified.

For NYSDOT actions involving federally or state listed species, NYSDOT must first conduct an assessment to determine whether the action has the potential to result in “take” of the listed species. If the assessment shows that there may be or is likely to be a take of state-listed species as a result of the action, consultation with the NYSDEC must follow.¹¹⁶ If NYSDOT finds that an adverse effect to federally listed species may occur, formal consultation must be initiated by the FRA with the U.S.FWS or NMFS. The U.S.FWS or NMFS must prepare a Biological Opinion, stating whether the project would put the continued existence of any listed species or EFH in jeopardy.

If an adverse effect may occur to EFH protected under the U.S. Magnuson-Stevens Fishery Conservation and Management Act, a written EFH Assessment must be prepared describing the effects of the project on EFH and identifying proposed mitigation measures.

4.14. Critical Environmental Areas under the State Environmental Quality Review Act

4.14.1. Regulatory Context

State Environmental Quality Review Act (SEQR) regulations (6 NYCRR 617.14(g)) designate protection for Critical Environmental Areas (CEAs). Under the New York State Environmental Quality Act, state and local agencies may designate specific geographic areas within their boundaries as "Critical Environmental Areas" (CEAs). In order obtain this designation; the area must have one or more of the following exceptional or unique characteristics:

- A benefit or threat to human health;
- A natural setting (e.g., fish and wildlife habitat, forest and vegetation, open space, and areas of important aesthetic or scenic quality);
- Agricultural, social, cultural, historic, archaeological, recreational, or educational values; or

¹¹⁶ NYSDOT 2010. The Environmental Manual. Section 4.4.9.3 Threatened and Endangered Species. Accessed March 2012. Available: <<https://www.dot.ny.gov/divisions/engineering/environmental-analysis/manuals-and-guidance/epm>>.

- An inherent ecological, geological or hydrological sensitivity that may be adversely affected by any change.

Following designation, evaluation of the potential impact of any action on the environmental characteristics of the CEA is required in the determination of significance prepared pursuant to Section 617.7 of SEQR.

4.14.2. Methodology

NYSDOT consulted the NYSDEC Division of Environmental Permits regarding the presence and location of SEQR-designated Critical Areas within a half-mile of the corridor centerline (study area). NYSDOT received correspondence from the NYSDEC on May 2, 2011 regarding mapping of SEQR critical areas.¹¹⁷ On January 12, 2012, correspondence arrived from the NYSDEC regarding future updates to the CEAs, which will be published on the NYSDEC website in February 2012.¹¹⁸ In addition, NYSDOT consulted the list of SEQR Critical Areas and maps available from the NYSDEC website.¹¹⁹

4.14.3. Existing Conditions

Within a half-mile of the corridor centerline for both the 90/110 and the 125 Study Areas, there are three CEAs in Westchester County, three in Dutchess County, three in Monroe County and four in Erie County. Within the Empire Corridor 90/110 Study Area only, there is one CEA in Schenectady County, and one in Onondaga County. These areas are described in Exhibit 4-18. Several of the Critical Environmental Areas overlap or coincide with protected publicly parklands in Dutchess and Westchester Counties.

Two of the CEAs overlap with the Margaret Norrie State Park in Dutchess County (Indian Kill CEA) and NYSDEC lands for the Crum Creek Waterway Access (Hogback Hill). In Westchester County, the Croton Point Park is included in both the Croton Point Park CEA and the “County and State Park Lands” CEA, which also includes Montrose Point State Forest, Oscawana County Park, Rockwood Hall State Park (part of the adjoining Rockefeller State Park Preserve), Rockefeller State Park Preserve itself, and Lenoir Preserve County Park. The Hudson River CEA encompasses much of the waterfront areas along the Hudson River in Westchester County.

The CEAs in Monroe County also include areas zoned as “open space,” lands with slopes greater than 15 percent, heavily wooded land, and drainage systems designated on official street map.

¹¹⁷ David Rebecca, NYSDEC, “Re: Empire Corridor High Speed Rail,” e-mail/personal communication with Karen Kays, Pinyon Environmental, Inc., May 2, 2011.

¹¹⁸ David Rebecca, NYSDEC, “Re: Empire Corridor High Speed Rail data set,” e-mail/personal communication with Rosie Wilson, Pinyon Environmental, Inc., January 12, 2011.

¹¹⁹ NYSDEC. “Critical Environmental Areas,” website accessed June 2011. <<http://www.dec.ny.gov/permits/6184.html>>

Exhibit 4-18—Critical Environmental Areas Designated under SEQR in half-mile Study Area

County	Critical Environmental Area	Designation Date	Designating Agency	Reason
Erie	Freshwater Wetlands within Town Reinstein Woods – 269 acre Nature Preserve with 400' wide peripheral buffer John Stiglmeier Cayuga Creek to 100-year floodplain	9-29-79 7-27-88 9-27-91 9-27-91		None given None Given Preserve wildlife and green area Preserve wildlife and green area
Monroe	Land within 100 feet of Genesee River, Erie Canal, Lake Ontario or River Gorge (except in manufacturing industrial zone) Cobbs Hill Three smaller CEAs are within the study area *	3-14-86	City of Rochester	None given.
Onondaga	Portions of Nine-Mile Creek within Town ¹	9-4-96	Town of Camillus	None given.
Schenectady	Aquifer Area Overlay Zone ¹	4-5-85	Town of Rotterdam	Conserve, improve, protect natural resources.
Dutchess	Hogback Hill Indian Kill Vanderburgh Cove	6-7-09	Town of Hyde Park	Sensitivity to change & habitat and species protection.
Westchester	Croton Point Park County and State Park Lands Hudson River	1-31-90	County of Westchester	Exceptional or unique character.
*the CEAs in Monroe County also include areas zoned as "open space," lands with slopes greater than 15 percent, heavily wooded land, and drainage systems designated on official street map.				
¹ CEA located only in Empire Corridor 90/110 study area.				

4.14.4. Environmental Consequences

Comparison of Alternatives

The section below identifies elements of the Preferred Alternative that would have the potential to impact the environmental characteristics of Critical Environmental Areas (CEAs) designated under the New York State Environmental Quality Review (SEQR) Act. Appendix G.13 addresses the potential for the other alternatives to affect these CEAs. There are total of 17 CEAs in the study area for the proposed program alternatives: three in Westchester County, three in Dutchess County, one in Schenectady County, one in Onondaga County, five in Monroe County, and four in Erie County.

All of the Build Alternatives would involve either work or increased train traffic in the vicinity of six CEAs along Empire Corridor South. The full extent of the potential impacts to the CEAs will not be known until the program is further developed, but the potential for impacts is described below. The Base Alternative would not involve any impacts to CEAs.

Most of the CEAs whose designation and boundaries are clearly defined are separated from the rail

corridor by urban lands and would not likely be impacted by proposed work. Alternatives 90A, 90B, and 110 will involve work in proximity to the same CEAs. Work proposed in these locations will largely occur within the existing rail right-of-way and will include the installation of a new track in some locations. Direct impacts will be unlikely at many of these locations since work will be contained within the right-of-way.

For Alternatives 90B and 110, third and fourth track improvements and increased train frequency would occur in the vicinity of the same CEAs in Schenectady, Onondaga, Monroe and Erie Counties as are in the vicinity of Alternative 90A. The majority of these CEAs would not cross the proposed improvements; however, the program area would pass directly through “Portions of Nine Mile Creek” and “Land within 100 feet of the Genesee River, Erie Canal, Lake Ontario or River Gorge except in manufacturing industrial zone.” Potential long-term impacts could involve noise and/or visual impacts from train operations, with the potential of ROW property acquisition impacts within the two aforementioned CEAs. Short-term impacts related to construction are discussed in Section 4.25.3.

The new Alternative 125 track alignment would fall within the vicinity of the Town of Rotterdam’s “Aquifer Area Overlay Zone” CEA in Schenectady County. However, the CEA and proposed track alignment would be approximately a half-mile away from each other and would be separated by urban lands. No impacts to this CEA would be anticipated. All portions of the Alternative 125 track alignment that would not overlap with Alternatives 90A, 90B, and 110 would not be in the vicinity of any designated CEA, and therefore no additional impacts would be anticipated.

Further investigation would be necessary to assess impacts as part of the Tier 2 evaluations of the Preferred Alternative.

Alternative 90B (Preferred Alternative)

Empire Corridor South

The impacts of the Preferred Alternative include impacts from the following Alternative 90A projects.

- Two projects, the 1.4 miles of new track for the Tarrytown Pocket Track/Interlocking and signal improvements proposed along 43 miles (MPs 32.8 and 75.8), would occur in the vicinity of the “Hudson River” CEA, designated to extend along the entire length of the Hudson River within Westchester County, from approximately MP 14 to MP 45.
- Additionally, the “County and State Park Lands” CEA includes lands that intersect or run adjacent to the rail right-of-way at MP 17 (Untermeyer Park), MP 26 (Kingsland Point County Park and Devries Park), MP 27 (Peabody Field), MP 28 (Rockwood Hall State Park) and MP 37 (Oscawana County Park), although the only changes at most these locations would be the additional train trips.
- The “Croton Point Park” CEA intersects the rail right-of-way at approximately MP 33.
- Direct impacts would not be anticipated to the “Hudson River” and “County and State Park Lands” CEAs since work would occur primarily within the existing right-of-way and would only extend north from MP 33, and would be unlikely to change the unique character of these CEAs.
- Along this section, 10 miles of new third track (MPs 53 to 63) and improvements at the Poughkeepsie Yard/Storage Facility (MPs 71 to 75.8) will not affect CEAs.
- North of Poughkeepsie and south of Albany-Rensselaer Station (MPs 75.8 to 140), proposed improvements in close proximity to CEAs include rock slope stabilization (MPs 105 to 130) and three new control points (CP 82, CP 99, and CP 136). Since work will be confined to the right-of-

way, no changes to these CEAs are anticipated.

Empire Corridor West/Niagara Branch

Alternative 90A improvements that are part of the Preferred Alternative include the following.

- Alternative 90B would be located in the vicinity of, and would result in increased train frequency, near several designated CEAs in Monroe County: “Land within 100 feet of the Genesee River, Erie Canal, Lake Ontario or River Gorge except in manufacturing industrial zone,” “Lands with slopes greater than 15 percent,” “Heavily wooded land,” and “Drainage systems designated on official street map.” In addition, proposed improvements under Alternative 90B would occur in the vicinity of an area meeting the City of Rochester CEA definition of “Areas zoned ‘open space’” at the western city limit.
- Station improvements at the Buffalo-Depew Station (MPs 429.5 to 432.5) would occur in the general vicinity of three CEAs designated by the Town of Cheektowaga. All three of the Town of Cheektowaga CEAs are no closer than 3,000 feet from the rail right-of-way at MP 433 and are separated from the railroad by urban lands. Although some work outside of the existing right-of-way at MP 433, these CEAs would not likely be impacted due to their distance from the proposed work.

For Alternative 90B, areas where third or fourth track would be located outside the existing right-of-way would not be located in designated CEAs. For Alternative 90B, third and fourth track improvements and increased train frequency would occur in the vicinity of the same CEAs in Schenectady, Onondaga, Monroe and Erie Counties as previously mentioned that are in proximity to the Alternative 90A projects described above. The majority of these CEAs would not cross the proposed improvements; however, the program area would pass directly through “Portions of Nine Mile Creek” and “Land within 100 feet of the Genesee River, Erie Canal, Lake Ontario or River Gorge except in manufacturing industrial zone.” Work in these areas would occur within the existing right-of-way and would be unlikely to impact these CEAs.

4.14.5. Potential Mitigation Strategies

Based on preliminary screening of Tier 1 concept alternatives, direct impacts on CEAs are not anticipated. During the Tier 2 assessment, refinements in design, mapping, and impacts assessments for the Preferred Alternative, Alternative 90B, will be performed. If required, program planning will incorporate avoidance and minimization of CEA impacts to the extent practicable. NYSDOT would need to comply with the New York State Environmental Quality Review Act for any potential impacts to environmental characteristics of a CEA.

If avoidance is not possible, measures to minimize or reduce the impacts should be evaluated. The mitigation that is appropriate for each CEA affected may depend on the reason for designation, e.g., a site that is designated for avoidance as a threat as an inactive hazardous waste site might involve drainage improvements and the mitigation may be markedly different from an ecologically significant site. Potential CEA mitigation measures that can be developed in coordination with the state agencies and landowners can include avoidance and minimization in the design phase, installation of wildlife crossings, and implementation of construction Best Management Practices, and improving or optimizing area drainage.

4.14.6. Future Analysis

If additional analysis is required for any impacts on CEAs, outreach to the agency or agencies that made the CEA designation may be performed, as appropriate, to understand why the CEA was designated and its characteristics. An understanding of why an area became a CEA will facilitate a determination of whether the proposed action will have a significant adverse environmental impact. For instance, a CEA designated because of a threat would be something that the municipality or agency would want the public to be aware of so that harm to public health or safety or inappropriate use of the affected area could be avoided. If required, this type of determination would be made as part of the Tier 2 NEPA/SEQR documentation for the Preferred Alternative, Alternative 90B.

4.15. Historic and Cultural Resources

4.15.1. Regulatory Context

This evaluation of historic resources has been performed in accordance with NEPA and Section 106 of the National Historic Preservation Act (NHPA) of 1966 (as amended) and associated implementing regulations in 36 CFR Part 800. Section 106 of the NHPA mandates federal agencies consider the effect of their actions on historic properties, defined as “*any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places.*” Section 110 of the NHPA also includes specific guidelines for the treatment of National Historic Landmarks (NHLs). NHLs are properties of national significance designated by the United States Department of Interior because they possess exceptional historic value. The NHPA mandates additional protection of NHLs by requiring that federal agencies undertake planning and actions as necessary to minimize harm when considering undertakings that may directly and adversely affect NHLs.

Historic properties are also protected by Section 4(f) of the Department of Transportation Act of 1966. Section 4(f) prohibits actions by the Secretary of Transportation that require “use” of a historic property that is listed or eligible for inclusion in the National Register of Historic Places (NRHP), unless it is determined that there is no feasible and prudent alternative to the use of such property, and all possible planning has been undertaken to minimize harm to the 4(f) property. If a use of a Section 4(f) park or recreation property is determined to occur, a Section 4(f) Evaluation will be prepared and circulated as part of Tier 2 environmental documentation, as appropriate (see Section 4.23).

Recent changes under the Fixing America’s Surface Transportation Act (FAST) Act (Public Law 114-94), enacted December 4, 2015, include certain exemptions for active railroad lines, their component elements, and railroad rights-of-way from Section 106 and Section 4(f) requirements. Section 11504 of the Fast Act (49 U.S.C. 24202) mandated the development of a Section 106 exemption for “railroad rights-of-way.” These recently enacted or pending FAST Act provisions will be a consideration in formulating the Tier 2 assessments.

The New York State Historic Preservation Act of 1980 (SHPA) requires that state agencies consider the effect of their actions on properties listed or determined eligible for listing in the New York State Register of Historic Places. Separate review under the SHPA is not required when NHPA applies. However, if there is no federal involvement in future tiers or phases of the project, such as grant funding, permits or approvals, then only SHPA would apply to those future tiers or phases and Section 106 of NHPA and Section 4(f) would not be applicable.

4.15.2. Methodology

Tiered Approach

This Tier 1 EIS addresses broad corridor-level issues and proposals of the program. The intended purpose of this Tier 1 EIS is to make broad-corridor level decisions with regard to parameters such as operating speed/travel times, service frequency, and infrastructure requirements.

All alternatives except Alternative 125 would follow the existing Empire Corridor alignment along both the Empire Corridor South and Empire Corridor West. The purpose of developing a conceptual “alignment” for Alternative 125 in the Tier 1 EIS was to provide a basis for comparison of corridor-level performance, cost, and the impact potential of a new corridor alternative versus existing corridor alternatives (i.e., Alternatives 90A, 90B [the Preferred Alternative], and 110). The purpose of the Tier 1 EIS does not include studying alternative alignments to achieve the 125 miles per hour speed, nor does it include selecting a specific alignment. To achieve the higher speed of Alternative 125, much of this alternative along the Empire Corridor West would be on a new corridor outside of the existing Empire Corridor alignment. Because portions of Alternative 125 would not be located within the existing rail corridor, one representative “alignment” was developed for Alternative 125 at a conceptual level.

As previously noted, the Empire Corridor Program sponsors (FRA and NYSDOT) are addressing consideration of potential environmental impacts of the program in accordance with the requirements of NEPA and NHPA using a tiered process, as provided for in 40 CFR 1508.28. The Section 106 implementing regulations allow agencies to use a phased process to comply with Section 106 in coordination with NEPA, per 36 CFR 800.8(c)(1).

As the goal of the Tier 1 EIS is only for planning purposes and alternatives analysis, FRA initiated the Section 106 process under 36 CFR Part 800.3, defined the Areas of Potential Effects (APEs), identified consulting parties, and conducted a preliminary investigation to identify historic properties in the various corridor alternatives. The preliminary identification of historic properties is being used to support these planning activities and this Tier 1 EIS identifies the likely presence of historic properties in the APEs for the five alternatives to help inform future Section 106 requirements.

FRA has determined that the Tier 1 EIS planning process does not have the potential to cause effects to historic properties, and FRA has no further Section 106 responsibilities with respect to Tier 1 activities. Any Tier 2 phase of the program, contingent upon federal involvement such as construction funding, would trigger additional Section 106 requirements that would build upon the Section 106 processes described in this document. Future requirements would include such things as final identification of and evaluation and assessment of effects to historic properties, as well as resolution of adverse effects.

Program sponsors will prepare additional site-specific environmental documentation, including Section 106 documentation as appropriate, for Tier 2 component projects. It is anticipated that Tier 2 activities could be governed under the terms of a Section 106 Programmatic Agreement (PA) executed in accordance with 36 CFR 800.14(b). In advancing individual projects in the Tier 2 assessments, railroad exemptions under Section 11504 of the FAST Act (which directed U.S. DOT in concert with ACHP to develop certain Section 106 exemptions for railroad rights-of-way) will also be assessed. The Draft PA, addressed later in this section (see Appendix H of the Tier 1 Draft EIS), has been preemptively drafted and may provide a mechanism and framework for meeting NHPA compliance obligations in the Tier 2 phase of the program.

Area of Potential Effects

The Section 106 process requires federal agencies to determine the APE, which is defined in 36 CFR 800.16(d) as “*the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties.*” The scale and nature of an undertaking both influence the APE.

The APE for each of the alternatives for the Empire Corridor Program has been delineated to indicate the areas in which each of the proposed alternatives could cause potential direct effects and indirect effects. The categories of construction activities that could cause effects include construction of track, modification of track and related infrastructure, service road construction or realignment, and station construction or alteration. Direct physical effects may include such activities as demolition, alteration, or damage from construction, and indirect effects may include things such as the introduction of visual, audible, or atmospheric elements that may alter the characteristics of an historic property in a manner that would diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling or association. Archaeological resources are potentially directly affected from construction activity resulting in disturbance to the ground such as excavation, grading, pile-driving, cutting and filling, and staging.

Direct APE

For the purposes of this Tier 1 EIS, the APE for potential direct effects has been delineated to extend 100 feet in both directions from the centerline of the existing railroad tracks to encompass all locations where project construction activities could occur. Where the centerlines of the high-speed alternative (90 mile per hour [mph], 110 mph, and 125 Alternatives) alignments would differ from the existing centerline, the direct APE extends 100 feet in both directions from the centerline of those alignments. Areas where the centerlines of the 90 mph and 110 mph alternatives differ from that of the existing alignment are limited, and the alignments never diverge by more than approximately 150 feet. As described above, an inventory of all previously-identified archaeological and architectural resources within the direct APE has been compiled and is presented below.

Indirect APE

For the purposes of this Tier 1 EIS, the APE for indirect effects has been delineated to extend 600 feet in both directions from the centerline of the existing railroad tracks. As in the direct APE, where the centerline of the high-speed (90 mph, 110 mph, and 125 mph APEs) alignments would differ from the existing centerline, the indirect APE extends 600 feet in both directions from the centerline of those alignments. The alignments never diverge by more than approximately 150 feet. The 600-foot APE was developed in consultation with SHPO and federally recognized tribes to encompass potential indirect effects that could be reasonably foreseen at the Tier 1 level. Notably, Alternative 125 is the only alternative that would incorporate overhead catenary systems, which could be visible from longer distances in some areas. If Alternative 125 had been advanced for further study at the Tier 2 level, the APE would be reassessed and expanded to adequately consider the potential for indirect effects.¹²⁰ Appendix G.14 includes an inventory of all architectural resources within the indirect APE.

¹²⁰ Although FTA noise standards set a standard screening distance of 750' (unobstructed) and (375' obstructed) for noise analyses, preliminary noise analyses completed as part of this Tier 1 EIS indicate that the area in which there is the potential for the proposed program alternatives (with the exception of Alternative 125) to result in noise impacts is substantially smaller than the areas delineated as the APEs for direct and indirect effects. In the case of Alternative 125, the potential for noise impacts is expected to vary by location.

Because the alternatives are at an early design stage, the APEs presented in this Tier 1 EIS are reasonable approximations of the areas in which direct and indirect effects could occur. In June 2013, SHPO provided a letter of concurrence on the proposed APEs. If the Tier 2 analysis of Alternative 90B, the Preferred Alternative, requires modifications to the APEs for component projects, FRA and NYSDOT would alter the APE as appropriate in consultation with the SHPO and/or THPO following the process outlined in 36 CFR Part 800.4(a)(1).

Identification of Historic Properties Including Archaeological Sites and Architectural Resources

This Tier 1 EIS focuses on identifying the “likely presence” of historic properties in the APEs for each alternative by identifying previously designated architectural resources and previously identified archaeological sites (36 CFR 800.4[b][2]). Based on the files of the New York State Historic Preservation Office (SHPO) and the New York State Museum (NYSM), program sponsors compiled an inventory of all previously recorded architectural resources, including buildings, sites, objects, districts, and structures, in the direct and indirect APEs, and archaeological sites in the direct APE, for the 90/110 Alternative and the 125 Alternative. In addition to SHPO and NYSM sites, the Oneida Nation, a federally recognized Indian tribe, provided information on archaeological sites known to the Oneida Nation, as described below under “Tribal Coordination and Consulting Parties.” The sites identified by the Oneida Nation, located in Oneida and Madison counties, have been added to the project mapping and inventories of known archaeological sites.

Final identification of historic properties in the APEs, not previously identified by the SHPO, NYSM, or the Oneida Nation, or without an NRHP eligibility designation, would be undertaken as part of the Tier 2 analysis specifically for the Preferred Alternative, Alternative 90B, for this program, as appropriate. To date, no detailed archaeological documentary studies or archaeological field investigations (Phase I archaeological studies) have been prepared as part of the Tier 1 analysis. As described above, previously-identified archaeological sites have been mapped and inventoried to serve as a preliminary indicator of archaeological sensitivity within the APEs. In order to identify archaeological historic properties that could be affected by the program, archaeological documentary studies and field investigations (as appropriate) would be carried out as part of the final identification efforts for the Tier 2 analysis of the Preferred Alternative, Alternative 90B.

Tribal Coordination and Consulting Parties

FRA, in consultation with NYSDOT and SHPO, identified federally-recognized Indian tribes (tribal nations) under Section 106 of NHPA. The tribal nations were identified on the basis of previously-identified geographic areas of interest commonly used by NYSDOT and SHPO. As part of the identification process, FRA utilized the tribal status and contact information on file with the U.S. Bureau of Indian Affairs. On May 3, 2011, FRA sent letters to the following federally-recognized tribal nations inviting them to participate as consulting parties per 36 CFR 800.2(c)(2):

- Cayuga Nation of New York,
- Seneca Nation of Indians,
- Tonawanda Seneca Nation,
- Onondaga Nation,
- Oneida Indian Nation,
- Tuscarora Indian Nation,
- Stockbridge-Munsee Community Band of the Mohican Nation,
- Delaware Nation,
- the Shinnecock Nation,

- St. Regis Mohawk Tribe, and the
- Seneca-Cayuga Tribe of Oklahoma.

The Mohican Nation, the Oneida Nation, and the Seneca Nation replied. These three tribal nations expressed their interest in the program and their desire to be consulting parties in accordance with Section 106 of NHPA.

On May 4, 2012, NYSDOT invited all of the federally-recognized tribal nations listed above (and one additional federally-recognized tribe, the Delaware Tribe of Indians) to an information-gathering meeting in Rochester, NY, on May 30, 2012. At the meeting, the program sponsors presented an overview of the program, the proposed Section 106 methodology and the preliminary program APE, and took comments from the tribal nations. At the request of several of the tribes that participated in the May 30, 2012 meeting, NYSDOT sent maps of the alternative alignments showing the approximate locations of previously identified archaeological sites to the tribal nations.

On November 21, 2012, NYSDOT on behalf of FRA sent letters to each of the tribal nations and SHPO describing and illustrating the boundaries of the proposed APE for their review and comment. In a letter to FRA and NYSDOT dated December 14, 2012, the Oneida Nation provided comments on the proposed program and requested a meeting to discuss the proposed program. FRA also arranged a meeting with the Oneida Nation on April 18, 2013 that representatives of NYSDOT attended.

In addition to consultation with federally-recognized Indian tribes, FRA and NYSDOT identified and engaged with consulting parties, including state-recognized tribal nations, in accordance with 36 CFR 800.2(c)(3) through (5) and 800.3(f). In consultation with SHPO, FRA and NYSDOT identified potential consulting parties for the Tier 1 process based on a demonstrated interest in broad, corridor-wide, or regional-level aspects of the proposed undertaking. In addition to the SHPO and ACHP, the list of potential consulting parties included the following non-federally recognized tribes and state or region-wide preservation organizations:

- the Mohawk Nation Council of Chiefs,
- the Unkechaug Nation,
- the Preservation League of New York State,
- the Hudson River Valley Greenway,
- the Erie Canal National Heritage Corridor,
- Preservation Buffalo Niagara,
- the Landmark Society of Western New York, and
- the Preservation Association of Western New York.

Three parties responded expressing interest in participating as consulting parties: the Preservation League of New York State, the National Park Service Erie Canal National Heritage Corridor, and the Preservation Buffalo Niagara. FRA subsequently approved the consulting party status of these three entities.

On May 2, 2013, FRA and NYSDOT met to provide project information to the consulting parties and give them an opportunity to provide comments. Representatives from the Preservation League of New York State and the Erie Canal National Heritage Corridor attended.

On May 2, 2013, the team met with SHPO to discuss utilizing a Programmatic Agreement to govern future requirements under Section 106 of the NHPA. A Draft PA was provided as part of the Tier 1 Draft EIS for review and comment, although it was later decided that adoption was premature and

would be taken up again in the Tier 2 assessments. The Draft Section 106 Programmatic Agreement (included as Appendix H of the Tier 1 Draft EIS) intends to address the process by which FRA and NYSDOT would continue to phase Section 106 activities and comply with Section 106 once Tier 2 undertakings are defined. This Draft PA could govern the future identification of historic properties as well as the assessment of and resolution of adverse effects to historic properties, as appropriate. FRA transmitted the Draft Programmatic Agreement to the SHPO, federally-recognized Indian tribes and consulting parties for review and comment. The Preservation League of New York State provided comments. FRA also received comments from the Oneida Indian Nation. On August 6, 2018, FRA notified the SHPO and consulting parties that the Section 106 process for the Tier 1 phase of the program is considered complete. FRA concluded that the Tier 1 EIS represents non-destructive program planning activities, allowed for under 36 CFR Part 800(1)(c), which have no potential to cause effects to historic properties. FRA and NYSDOT remain committed to following the requirements of 36 CFR 800 for Tier 2 projects that receive federal funding, as well as determining the applicability of changes under the FAST Act.

4.15.3. Existing Conditions

Historic Context

It is beyond the scope of this Tier 1 analysis to present a thorough and comprehensive history of the geology, precontact period, and historic period in New York State. However, as described in 36 CFR 800.4(b)(2) and 800.5(a)(3), where alternatives consist of large corridors and a phased approach is being taken, the process should assess the likely presence of historic properties based on background research and consultation. Information collected as part of Tier 1 analysis may be used to evaluate the significance of historic properties identified in later phases of the program. Therefore, a brief overview of precontact period conditions and relevant historic period themes, in particular transportation networks pertinent to the program corridor vicinity, is presented below to provide a basic background for the “Existing Conditions” presented later in this chapter and to identify broad topics for further research as part of the Tier 2 analysis.

Precontact Period

For the purposes of this report, the term “precontact” is used to describe the period prior to the use of formal written records. In the Western Hemisphere, the precontact period also refers to the time before European exploration and settlement of the New World. Archaeologists and historians gain their knowledge and understanding of precontact Native Americans in New York State from ethnographic reports, artifact collections, archaeological investigations, and oral tradition. Artifacts dating to the precontact period potentially found from ground disturbance as a result of the proposed program could include the remains of milling equipment, stone axes, adzes, arrowheads, and clay pottery vessels.

Historic Period

The earliest transportation networks in the State of New York consisted of waterways and Native American trails. The Hudson River was a natural highway for the region, and in the 1620s the Dutch built Fort Orange at the mouth of its principal tributary, the Mohawk River.

Canals and railroads dominated transportation development in the first half of the 19th century and were an important means of getting goods to market and a major factor in the value of land. The Erie Canal, completed in 1825, spurred the westward migration of American settlers, opened the only American trade route west of the Appalachians, and secured New York as the preeminent commercial

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Archaeology

Appendix G.14.1 and Exhibit 4-19 identify the number and type of sites in each county in the direct APEs for the 90/110 Alternative and the 125 Alternative.

90/110 Alternative APE

A total of 166 previously-identified archaeological sites have been identified within the direct APE for the 90/110 Alternative that extends along the Empire Corridor South/West and the Niagara Branch. Of these sites, 47 are SHPO archaeological sites, 117 are NYSM sites, and two are identified by the Oneida Nation (Sites 1 and 2). There are a total of 36 burial/habitation sites.

Direct APE: 125 Study Area

A total of 126 previously-identified archaeological sites have been identified within the direct APE for the 125 Study Area that extends along the Empire Corridor South/West and the Niagara Branch. Of these, 27 are SHPO archaeological sites, 96 are NYSM sites, and three are sites identified by the Oneida Nation (Sites 3 through 5). There are a total of 27 burial/habitation sites.

⁷³ New York State Canal Corporation. "Unlock the Legend of The New York State Canal System." Pamphlet. 1999.

⁷⁴ Ellis, Edward Robb. *The Epic of New York City*. New York: Old Town Books. 1966, 259.

⁷⁵ Burrows, Edwin G. and Mike Wallace. *Gotham, A History of New York City to 1898*. New York: Oxford University Press. 1999, 564.

⁷⁶ A.G. Lichtenstein & Associates, Inc. "New Jersey Historic Bridge Survey." 1994, 26.

Exhibit 4-19 – Summary of Previously Identified Archaeological Resources within Direct APEs

	SHPO Sites		NYSM Polygon Sites		Oneida Nation Sites		TOTAL	
	90/110 Study Area	125 Study Area	90/110 Study Area	125 Study Area	90/110 Study Area	125 Study Area	90/110 Study Area	125 Study Area
TOTALS	47	27	117	96	2	3	166	126
PERIOD	16 historic period sites, remaining Native American sites, 9 unknown	13 historic period sites, remaining Native American sites	1 historic period site, remaining Native American sites	1 historic period site, remaining Native American sites			17 historic period sites, 9 unknown, remaining Native American	14 historic period sites, remaining Native American sites
TYPES OF SITES	Historic period industrial: 4 Native American burial sites: 1 camp site: 7	Historic period industrial: 5 Historic burial sites: 1 camp site: 8	Native American camp site: 21 Habitation sites: 25 Burial sites: 12	Native American camp site: 20 Habitation sites: 20			Historic period industrial: 4 Native American burial sites: 13 camp site: 26 Habitation sites: 25	Historic period industrial: 5 Native American camp site: 28 Habitation sites: 20 Burial sites: 11

Architectural Resources

Previously-identified architectural resources located within the direct APE for the 90/110 Alternative and the 125 Alternative are summarized in Exhibit 4-20 and Appendix G.14. The NHLs, State and National Register (S/NR)-listed and eligible historic districts are noted in the text below. Exhibit G-25 illustrates the approximate locations of these resources. The previously identified architectural resources within the indirect APEs are summarized in Appendix G.14.

Exhibit 4-20 – Historic Architectural Resources within the Direct APE for each Alternative

County	NHL		S/NR-Listed/Eligible Resources - Individual		S/NR-Listed/Eligible Resources - Districts		Total Resources	
	90/110	125	90/110	125	90/110	125	90/110	125
New York			7	7			7	7
Bronx			1	1			1	1
Westchester			14	14	1	1	15	15
Putnam			3	3	2	2	5	5
Dutchess			13	13	2	2	15	15
Columbia			2	2	2	2	4	4
Greene							0	0
Rensselaer			3	2	1	1	4	3
Albany			2		1		3	0
Schenectady				1	1		1	1
Montgomery	1		9		1		11	0
Herkimer			1		1		2	0
Oneida			2				2	0
Madison				1			0	1
Onondaga							0	0
Cayuga							0	0
Wayne							0	0
Monroe			2	1	1	1	3	2
Genesee					1		1	0
Erie			1	2	1	1	2	3
Niagara			1	1			1	1
Multiple Counties	2	2					2	2
TOTALS	3	2	61	48	15	10	79	60
Note: Counties are listed from south to north, then east to west. Resources that fall within the direct APE are also within the boundaries of the indirect APE. The 90/110 Study Area is used for analysis of Alternatives 90A, 90B, and 110 and consists of the existing 464-mile long Empire Corridor alignment. The 125 Study Area is used for analysis of Alternative 125 and consists of portions of the existing Empire Corridor and new alignment and is 450 miles long.								

Direct and Indirect APE: 90/110 Alternative

A total of 79 previously-identified architectural resources are located in the direct APE for the 90/110 Alternative. Exhibit 4-20 summarizes these resources by county. Of the 79 architectural resources, three resources are NHLs: Fort Klock in St. Johnsville, Montgomery County, the Hudson River Historic District in Dutchess and Columbia Counties, and the New York State Barge Canal Historic District.

Fort Klock, a fortified stone homestead built in 1750, is part of a 30-acre complex that includes the historic homestead, a renovated Colonial Dutch Barn, blacksmith shop, and 19th-century schoolhouse.

The 32-square-mile Hudson River National Historic Landmark District stretches from Germantown in Columbia County to Hyde Park in Dutchess County. It includes over 40 riverfront estates, two villages, four hamlets, and significant designed landscapes and farmlands.

The 450-mile New York State Barge Canal National Historic Landmark District includes four branches

of the canal system (Erie, Champlain, Oswego, and Cayuga-Seneca) and encompasses 552 contributing structures. It includes the Erie Canal in the study area and canalized river sections (Tonawanda Creek, Mohawk, and Hudson Rivers).

Seventy-six other S/NR-listed or eligible resources are within the direct APE. Of these, 61 are individual properties while 15 are historic districts. At least four S/NR-eligible resources directly associated with the railroad are located in the direct APE.

There are approximately 350 bridges meeting the 50-year age criterion for S/NR eligibility located within the existing railroad alignment and thus within the direct APE. Any bridges 50 years old or older affected by the Preferred Alternative, Alternative 90B, program would also be evaluated for potential S/NR eligibility as part of the Tier 2 analysis, as appropriate. The NYSDOT's *Contextual Study of New York State's Pre-1961 Bridges* (November 1999), *Evaluation of National Register Eligibility* (January 2002), and *Historic Bridge Management Plan* (September 2002) would be consulted, among other documentary sources.

The resources within the 100-foot direct APE were included in the 600-foot indirect APE. A total of 356 previously-identified architectural resources are located in the indirect APE for the 90/110 Study Area that extends along the Empire Corridor South/West and the Niagara Branch. Of the 356 architectural resources, five are NHLs. Of the remaining S/NR-listed or eligible resources, 305 are individual properties and 46 are historic districts. At least eight S/NR-listed or eligible resources directly associated with the railroad are located within the indirect APE.

Direct and Indirect APE: 125 Alternative

A total of 60 previously-identified architectural resources are located in the direct APE for the 125 Alternative. These resources are summarized by county in Exhibit 4-20. Of the 60, two are NHLs: the Hudson River Historic District in Dutchess and Columbia counties and the New York State Barge Canal Historic District (described above). Of the remaining S/NR listed or eligible resources, 48 are individual properties and 10 are historic districts.

A total of 235 previously-identified architectural resources are located in the indirect APE for the 125 Study Area that extends along the Empire Corridor South/West and the Niagara Branch. Of the 235 resources, three are NHLs. Of the remaining S/NR-listed or eligible resources, 199 are individual properties, and 32 are historic districts.

4.15.4. Potential Adverse Effects

Comparison of Alternatives

As described under "Existing Conditions," previously-identified archaeological sites and architectural resources within the direct APE, and architectural resources within the indirect APE, have been inventoried and mapped. Because the design of program improvements has not progressed to a point sufficient to enable site-specific analyses of potential effects, specific potential effects to architectural and archaeological resources will not be provided as part of this Tier 1 Assessment. The Tier 2 level analysis will include an analysis of the Preferred Alternative's, Alternative 90B's, potential to result in long-term effects to specific architectural and archaeological resources, as described in Section 4.15.5, "Potential Mitigation Strategies" and Section 4.15.6, "Future Analysis."

The Preferred Alternative (Alternative 90B) would involve greater impacts than the Base Alternative,

and Alternatives 90A and 125. Alternative 90B could involve indirect or direct effects on a total of 303 archaeological and architectural resources (including NHLs, S/NR/listed and eligible individual resources and districts). This compares to indirect/direct effects to 100 archaeological and architectural resources for Alternative 90A, 24 resources for the Base Alternative, and 122 resources for Alternative 125. Impacts for the Preferred Alternative would be roughly comparable to that for Alternative 110, which would indirectly or directly affect 302 archaeological and architectural resources. Although the estimate of resources affected by Alternative 125 is lower, this alternative will involve far greater disturbance to undisturbed ground. The smaller number does not reflect what is anticipated to be a higher number of unidentified archaeological and architectural sites in more rural areas.

Of these impacts, the number of archaeological and architectural resources that would potentially be directly affected by the Preferred Alternative is 154, compared to 48 for Alternative 90A, 153 for Alternative 110, and 86 for Alternative 125. Although the number of resources within the direct APE are similar for Alternative 110 and the Preferred Alternative, the potential for impacts would most likely be greater for Alternative 110 due to the location of the proposed tracks 15 feet further than for Alternative 90B. Short-term impacts due to construction are discussed in Section 4.25.3. Appendix G.14 describes in more detail historic and archaeological resources potentially affected by the other alternatives considered, and the following section addresses potential effects of the Preferred Alternative.

Alternative 90B (Preferred Alternative)

Direct APE: Archaeological Sites

The archaeological impacts of the Preferred Alternative include the following impacts from Alternative 90A projects. There are 30 previously-identified archaeological sites located in the direct APE for Alternative 90B that could experience direct, physical effects due to construction-related activities, including 12 burial/habitation sites. These include:

- **New York County (Manhattan)** – Native American habitation and midden site and rock shelter (**2 total**)
- **Bronx County** – Native American midden site (**1 total**)
- **Westchester County**: Native American midden and camp sites and three habitation/burial sites, and three other Native American sites (**8 total**)
- **Putnam County** – Native American burial site and other traces of occupation (**2 total**)
- **Dutchess County** – two Native American habitation sites; two camp/burial sites; two N (S) sites; one quarry site (MP 65); and two other sites (**9 total**)
- **Montgomery County** – Native American burial site, a trail site, and two other sites (**4 total**)
- **Onondaga County** – two Native American camp/habitation sites and two other sites (**4 total**)

There are 88 previously identified archaeological sites located in the direct APE for Alternative 90B (see Appendix G.14) that could experience direct, physical effects due to construction-related activities, including 19 burial/habitation sites. These are:

- **Schenectady County** – Native American burial site, a midden, a camp site, and six other sites (**9 total**)
- **Montgomery County** – sixteen other Native American sites, two Native American camp sites and seven habitation sites, three pictographs/petroglyphs, two burial sites, one burial/habitation

three trail sites, a historic industrial site, and five other Native American and historic sites (40 total)

- **Herkimer County** – a Native American habitation site, a historic maritime site, four Native American trail/traces of occupation sites, and two other sites (8 total)
- **Oneida County** – three Native American camp sites; a burial site; and two sites identified by the Oneida Nation (6 total)
- **Onondaga County** – three Native American habitation/camp sites, a historic industrial site, and six other sites (10 total)
- **Cayuga County** – one Native American site (1 total)
- **Wayne County** – one Native American site (1 total)
- **Monroe County** – three Native American burial, trail, and camp sites and two other sites (5 total)
- **Genesee County** – two Native American trail sites, two camp sites, one other site, and a historic domestic site (6 total)
- **Erie County** – one Native American camp site and one other site (2 total)

Direct APE: Architectural Resources

The impacts of the Preferred Alternative include impacts from the following Alternative 90A projects. There are a total of 18 previously-identified architectural resources located in the direct APE for Alternative 90B that could experience direct, adverse effects due to construction-related activities. These are:

- **Westchester County** – Lyndhurst (MP 24); and Garrison Landing Historic District (MP 50) (2 total)
- **Putnam County** – Cold Spring Historic District (MP 52.5); *Individual*: U.S. Military Academy (MP 51); and West Point Foundry (MP 52) (3 total)
- **Dutchess County** – *Historic District*: Wheeler Historic District (MP 64); Stone Street Historic District (MP 65); *Individual*: National Biscuit Company Carton-Making and Printing Plant (MP 59); Mount Gulian (MP 61.5); Carman, Cornelius House (MP 62); Collyer, Capt. Moses W. House (MP 62); Poughkeepsie Railroad Bridge (MP 74); Poughkeepsie Railroad Station (MP 74); and Innis Dye Works (MP 74) (9 total)
- **Dutchess/ Columbia counties** – Hudson River Historic District (NHL) (MP 82-102) (1 total)
- **Rensselaer County** – Schodack Landing Historic District (S/NR-listed Historic District); Livingston Avenue Bridge (MP 143) (2 total)
- **Montgomery County** – Dove Creek Culvert (MP 177.5) (1 total)

Work proposed for Alternative 90B along Empire Corridor South is expected to occur within the existing right-of way. These resources are located within 100 feet of work proposed in the right-of-way.

Work proposed for the Preferred Alternative, Alternative 90B—which mainly consists of the construction of new track and new access road work— could have adverse effects on architectural resources located within the direct APE due to construction-related activities.

Only one of the seven existing stations where improvements are proposed for this alternative has been identified as a known architectural resource: Boeblert Transportation Center at Union Station (Utica Station), located in Oneida County. As part of the Tier 2 analysis, if adverse effects are anticipated, the other six stations, including Schenectady Station, Amsterdam Station, Rome Station, Syracuse Station, Rochester Station, and Buffalo-Depew Station, would be evaluated for their potential eligibility for S/NR listing, and effects would be evaluated for any other potentially impacted stations identified as eligible for S/NR listing. Union Station in Utica is S/NR-listed. Proposed work at this station includes the construction of a new center island platform and overhead pedestrian bridge; work in the station area also would include new siding, new passenger and freight track, removal of existing track, and new turnouts.

There are 19 architectural resources located in the direct APE for Alternative 90B (Preferred) that could experience direct, adverse effects due to construction-related activities. These include:

- **Schenectady County** – Stockade Historic District (MP 160) (**1 total**)
- **Schenectady/Montgomery/Madison/Herkimer/Onondaga/Cayuga/Wayne/Monroe/Erie/Niagara counties** – New York State Barge Canal National Register Historic District is designated as a National Historic Landmark (NHL) District (MPs 160, 177, 191, 201, 231, 292, 319, 330, 335, 339, 358.5, 374, and QDN13). The 450-mile historic district encompasses 552 contributing resources located along the railroad corridor, such as a railroad bridge over Erie Boulevard in Schenectady (MP 160), Lock E-13 in the Town of Root, Montgomery County (MP 191), and a moveable dam and lock in the Town of Palatine, Montgomery County (MP 201) (**1 total**)
- **Montgomery County** – Fort Klock (NHL) (MP 205); Nelliston Historic District (MP 201); *Individual*: Guy Park (MP 177); Montgomery County Farm (MP 193-194); Palatine Bridge Freight House (MP 197.8); Property at the northwest corner of Ann and Main Streets, Amsterdam (MP 177.5); Dove Creek Culvert that runs beneath the right-of-way near Steadwell Avenue in the Town of Amsterdam (MP 177.5); H.D.F. Veeder House (MP 188); hexagonal limestone well shelter (MP 198); and the Palatine Bridge cut limestone retaining wall and bridge abutment (MP 198) (**10 total**)
- **Herkimer County** – Little Fall Historic District (**1 total**)
- **Oneida County** – Union Station, Utica (MP 237.5); and a railroad station building in the village of Oriskany (MP 244.5) (**2 total**)
- **Monroe County** – Brown's Race Historic District (MP 370); *Individual*: Coldwater Station (MP 378); and 60 South Main Street (MP 386) (**3 total**)
- **Genesee County** – Lake Street Historic District (MP 389) (**1 total**)

The exact area of the proposed property acquisitions at MPs 168.3, 210.8, 215.6, 237.7, 286.4, 341.1, and 377.6 has not yet been determined. It is assumed for the purposes of this analysis that the property to be acquired would be directly adjacent to the existing right-of-way. There are no previously-identified architectural resources located in close proximity to these mile markers, with one exception: MP 237.7, which is near Union Station in Utica (discussed above). There could be additional adverse impacts to architectural resources as a result of the property acquisitions proposed for Alternative 90B. As part of the Tier 2 analysis, properties proposed to be acquired would be surveyed to identify any potential architectural resources. Effects would be assessed for any resources identified as eligible for listing on the State/National Registers.

Notably, there are a number of rail bridges located within the right-of-way, which could be adversely affected by work proposed for this alternative. These bridges would be identified and evaluated for

their potential eligibility for S/NR listing in the Tier 2 level analysis, as appropriate. Effects would be evaluated for any bridges determined to be eligible for S/NR listing.

Indirect APE: Architectural Resources

The impacts of the Preferred Alternative include impacts from the following Alternative 90A projects. There are 51 architectural resources located in the indirect APE for these Alternative 90B projects. These include:

- **New York County (Manhattan)** – Fort Tryon Park and the Cloisters (Individual) (MP 9) (**1 total**)
- **Bronx County** –*Individual*: Wave Hill (MP 13); Colgate Robert House (MP 13); and the William E. Dodge House (MP 12) (**3 total**)
- **Westchester County** –*Individual*: Croton North Railroad Station (MP 34); Standard House (MP 41); Peekskill Freight Depot (MP 41); Bear Mountain Bridge and Tollhouse (MP 45); Tarrytown Railroad Station (MP 25); Riverside Hose Company (MP 25); and a resource located on the southeast corner of Central Avenue and North Water Street (MP 41.5) (**7 total**)
- **Putnam County** –*Individual*: Wilson House (MP 49.5); Rock Lawn and Carriage House; and Eagle’s Nest (MP 51) (**3 total**)
- **Dutchess County** –*Historic District*: Main Street Historic District (MP 65); Union Street Historic District (MP 73.5); Mill Street-North Clover Street Historic District; *Individual*: Shay’s Warehouse and Stable (MP 65); Shay, William Double House (MP 65); Zion Memorial Chapel (MP 65); Brower, Abraham House (MP 65); Brower, Adolph House (MP 65); Bannerman’s Island Arsenal (MP 55.5); Chelsea Grammar School (MP 62); Church of the Holy Comforter (MP 73.5); Pelton Mill (MP 74); Old St. Peter’s Roman Catholic Church and Rectory (MP 74); Hoffman House (MP 74); Roosevelt Point Cottage and Boathouse (MP 76); Rhinecliff Hotel (MP 89); O’Brien General Store and Post Office (MP 89); Riverside Methodist Church and Parsonage (MP 89); Metro-North Railroad Bridge (MP 58); Mid-Hudson Bridge (MP 73); Johnson Plumbing Complex (MP 73); and Cornell Boathouse (MP 74.5) (**22 total**)
- **Columbia County** – Hudson Historic District (MP 114.5) (Historic District); *Individual*: Wiswall, Oliver House (MP 113.8); Requa House (MP 129); and Hudson and Boston Railroad Shop (MP 114.5) (**4 total**)
- **Montgomery County** –*Historic District*: Amsterdam East Main Street Historic District (MP 176); New York Barge Canal System Historic District (NHL) (MP 159-358.5); *Individual*: Guy Park Manor (MP 176.5); 6-8 Voorhees Street (MP 175.5); 366, 399, 401 West Main Street (MP 176.5); Guy Park (MP 177); resource on West Main Street (MP 177); and World War I Memorial (MP 177.5) (**10 total**)
- **Onondaga County** – New York State Fairgrounds Historic District (MP 294) (Historic District) (**1 total**)

There are 117 architectural resources located in the indirect APE for the Preferred Alternative, Alternative 90B. These include:

- **Schenectady County** – Union Street Historic District (MP 159.8); *Individual*: Central Fire Station (MP 159.5); Proctor, F.F. Theater and Arcade (MP 159.5); and Swart House and Tavern (MP 167.5) (**4 total**)
- **Montgomery County** – *Historic District*: Amsterdam East Main Street Historic District (MP 175.8); and Fonda Fairgrounds and Speedway Historic District (MP 186); and *Individual*: Fort Johnson (MP 179); New Courthouse – Fonda (MP 186.5); Wagner, Webster House (MP 198); Frey

House (MP 198.2); Nellis Tavern (MP 205.5); 6-8 Voorhees Street (MP 175); 366, 399, 401 West Main Street (MP 176.5); World War I Memorial (MP 177.8); 2, 3, 4, 9, 11, 19, 23, 25, 27, 29, 31, and 37 East Main Street (MP 186); 4, 6, 8, 10, 12, 14-16, 18, 22, 26, 30, 32, 34, 40, 42, 46, and 56 West Main Street (MP 186); 1 Cayadutta Street; Lock E-14 and Lock House; and the Nelson and Reese House (including cemetery and barn foundations) (MP 207) **(43 total)**

- **Herkimer County** – *Individual*: Herkimer House (MP 214); U.S. Post Office – Little Falls (MP 216.5); Herkimer County Trust Company building (MP 216.5); Palatine German Frame House (Wilder House) (MP 227); and *S/NR-eligible Individual*: 591 East John Street (MP 216.5); 401, 403, 407 South Ann Street (MP 216.5); Fleet Bank (MP 216.5); Snyder Apartments (MP 216.5); 48-54 West Main Street (MP 216.5); 24, 25, 55, 56 West Mill (MP 216.5); 151 Elizabeth Street (MP 217); and 338 West Main Street (MP 217) **(17 total)**
- **Oneida County** – Lower Genesee Historic District (MP 237.5); *Individual*: Foster Brothers Manufacturing Company (MP 237); Hieber, John C. and Company building (MP 237.5); Utica Daily Press building (MP 237.5); Hurd & Fitzgerald building (MP 237.5); and Byington Mill (Frisbie & Stansfield Knitting Company) (MP 237.5) **(6 total)**
- **Madison County** – South Peterboro Street Commercial Historic District; and *Individual*: U.S. Post Office – Canastota (MP 270); United Church of Canastota (MP 270); 203 South Main Street (MP 270); Canastota Public Library (MP 270); 115 South Main Street (MP 270); 223 James Street (MP 270); Alvord House (289.5); and East Palmyra Presbyterian Church (MP 344.5) **(9 total)**
- **Onondaga County** – Alvord House (MP 289.5); and New York State Fairgrounds Historic District (MP 294) **(2 total)**
- **Wayne County** – East Palmyra Presbyterian Church (MP 344.5); and Village of Clyde Historic District (MP 328.5) **(2 total)**
- **Monroe County** – *Historic District*: East Avenue Historic District (MP 368-370); St. Paul-North Water Streets Historic District (MP 371); State Street Historic District (MP 371); Bridge Square Historic District (MP 372); Madison Square-West Main Street Historic District (MP 372); Birch Crescent Historic District (MP 379); Prince Alexander Historic District (MP 370); Public Market Historic District (MP 370); *Individual*: Leopold Street Shule (MP 370.5); German United Evangelical Church Complex (MP 371); Andrews Street Bridge (MP 371); Federal Building (MP 371); Brick Presbyterian Church (371); Washington Street Rowhouses (MP 372); Foster Armstrong Piano Warehouse (MP 364); 1290, 1255-1257, 1239, 1320 University Avenue (MP 368.5); J. Hunderford Smith Company building (MP 369.5); Otis Lumber Company building (MP 369.5); Rochester Public Market (MP 370); Schwalb Coal & Oil Company (MP 370.5); Taylor Instrument Company (MP 373); Building C2 (H.F. Snyder & Son) (MP 386); and Building Z (former Richmond Residence) (MP 386) **(26 total)**
- **Genesee County** – Village of Bergen Historic District (MP 389); and 20 North Lake Street (MP 389) **(2 total)**
- **Erie County** – *Individual*: Buffalo Gas Light Company Works (MP 2.8); Delaware Park-Front Park System (MP 4); 1032 Niagara Street (MP 5); 1073 Niagara Street (MP 5); *Historic District*: Wende Correctional Facility (MP 422); Joseph Ellicot Downtown Historic District **(6 total)**

Although direct, adverse effects to architectural resources due to construction-related activities are not anticipated for resources located within the indirect APE, this assessment also considered the potential for this alternative to incur indirect, contextual effects to these resources.

4.15.5. Potential Mitigation Strategies

A Draft Section 106 Programmatic Agreement (PA) was drafted for this program in anticipation of the Tier 2 assessment level (see Appendix H of the Tier 1 Draft EIS), and proposed a Section 106 process for the component projects advanced for the Preferred Alternative, Alternative 90B. It was later decided that adoption was premature and would be taken up again in the Tier 2 assessments. The Advisory Council for Historic Preservation (ACHP) declined to participate in the development of the PA via e-mail dated July 20, 2012. As applicable, the Tier 2 assessments would adopt a Section 106 process outlining future identification, evaluation, and assessment of effects to historic properties including processes for the resolution of adverse effects. If unavoidable potential direct and/or indirect adverse effects are identified during the Tier 2 analysis, more detailed and specific measures to avoid, minimize and/or mitigate these effects would be defined and implemented in consultation with SHPO, involved THPOs and/or Tribal Organizations, ACHP (if appropriate), and any involved consulting parties.

For archaeological resources, mitigation measures that may be identified for component projects for Alternative 90B, the Preferred Alternative, at the Tier 2 level may include:

- Phase III data recovery, documentation,
- geoarchaeological survey,
- preparation and implementation of archaeological protection plans, and/or
- preparation of public education materials.

For architectural resources, possible mitigation measures include:

- The preservation or relocation of historic buildings;
- Historic American Buildings Survey (HABS)/Historic American Engineering Record (HAER) documentation;
- Production of educational materials interpreting the history and significance of affected resources for use by local libraries, historical societies, and educational institutions; and
- Installation of signage interpreting the history and significance of affected resources along the proposed rail corridor, or
- Planting vegetation or creating noise barriers along the proposed rail corridor.

Furthermore, in order to avoid inadvertent damage to historic resources located in close proximity to possible project construction, a Construction Protection Plan (CPP) would be prepared, as appropriate. The CPP would identify the historic resources to be included in the plan. It would also set for the specific measures to be used and specifications that would be applied to protect these resources during the construction period.

4.15.6. Future Analysis

The Tier 1 concepts and screenings were conceptual in nature, and not developed to a level that allows full evaluation of historic impacts; these assessments occur in Tier 2. The applicability of the recently enacted requirements in the Fixing America's Surface Transportation Act (FAST Act) under Section 106 to include new railroad exemptions (including for placement of track in former track locations within rights-of-way and railroad bridges) would be examined in Tier 2 assessments, when

details are available regarding project-specific proposals and their relationship to the railroad right-of-way.

As described in the “Methodology” section, the environmental compliance for this program is being conducted using a phased approach as outlined in 36 CFR 800.4(b)(2) and 800.5(a)(3). Determinations of eligibility and effect, as well as resolution of adverse effects under Section 106 of NHPA for the Preferred Alternative, Alternative 90B, will be deferred to Tier 2 of the process.

If the analysis concludes that a proposed project within the Alternative 90B program would have an adverse effect, measures to avoid, minimize, or mitigate adverse effects would be identified.

4.16. Parks and Recreational Areas

4.16.1. Regulatory Context

Federal protection of parklands is provided under Section 4(f) of the U.S. Department of Transportation Act (for federally funded transportation projects) and under Section 6(f) of the U.S. Land and Water Conservation Fund (LWCF) Act (for LWCF-funded parks). Section 4(f) of the U.S. DOT Act (49 U.S.C. 303(c)) of 1969, as amended, states that the Secretary of the U.S. DOT shall not approve any program or project that requires the “use” of any land from a public park, recreation area, wildlife and waterfowl refuge, or historic site, unless there is no feasible and prudent alternative, and such project or program includes all possible planning to minimize harm. FRA *Procedures for Considering Environmental Impacts* states that each project shall consider impact on recreational opportunities and use of (4) properties. Section 4.23 addresses Section 4(f)/Section 6(f) compliance.

Under Section 6(f) of the U.S. Land and Water Conservation Fund (LWCF) Act, the United States Department of the Interior (DOI) provides funding for state, county, and local efforts to advance public recreation. Once LWCF funds are utilized for a particular recreation project, conversion of that park facility for any non-recreational purpose is prohibited unless alternatives are assessed and steps are taken to identify, evaluate, and supply replacement parkland. In addition, the Secretary of Interior must grant prior approval for the conversion and replacement parkland.

If a conversion of Section 6(f) parks or lands may occur, a Section 6(f) Evaluation will be prepared and circulated as part of the Tier 2 assessment. Section 4.23 provides a Tier 1 evaluation of Section 4(f)/Section 6(f) issues.

New York State places similar restrictions on all municipal parklands, which cannot be converted to a non-park use without prior approval from the New York State Legislature (referred to in New York as parkland alienation). The legal basis for the need for “parkland alienation” legislation is not found in statute, but has been established in common law through the New York State courts under the “public trust doctrine.” When a municipality accepts federal or state funding for the acquisition or improvement of parklands, additional restrictions apply to the sale, lease, exchange, or use for non-park purposes.

4.16.2. Methodology

Parks and recreation areas for study areas within 1,000 feet of the corridor centerline for all alternatives were identified using existing mapping collected from federal and state agencies.

Federal, state, county, and municipal parks and recreation areas were located using Geographic Information System (GIS) mapping obtained from the New York State GIS Clearinghouse, New York State Office of Parks, Recreation, and Historic Preservation (NYSOPRHP), and the New York State Department of Environmental Conservation (NYSDEC). The GIS mapping and information from the National Park Service (NPS) staff was obtained of National Wildlife Refuges, National and State Historic Sites, NNLs,¹²⁵ National Memorials, and National Monuments.¹²⁶ The NPS website was consulted to identify and locate these NPS properties, National Heritage Areas and county-by-county Land and Water Conservation Fund park grants. Aerial photography and Google street mapping were reviewed to supplement existing maps and identify other parks and recreation areas within 1000 feet of the corridor centerline for both the 90/110 and the 125 Study Areas. Publicly owned recreation areas were defined to include publicly owned golf courses (but not “public” golf courses that are open to the public, but privately owned). This section also addresses tribally owned recreational facilities.

4.16.3. Existing Conditions

Overview

The existing parks and recreation areas in the study area are concentrated in two main areas: the Hudson River Valley and the New York State Canal System within the Mohawk River Valley.

- The Hudson River Valley has a concentration of national, state, county, and municipal parks and recreation areas due to its location and scenic views, as well as the concentration of population centers that developed along the river. The area also has a rich cultural and economic heritage and hosts a number of historic districts and sites. The national and state historic sites are important recreational tourism destinations.
- The **New York State Canal System**, owned by the New York State Canal Corporation provide recreational opportunities for water-based navigation and trail users. The **New York State Canalway Trail System** is comprised of a network of more than 300 miles of existing multi-use, recreational trails across upstate New York. Major segments are adjacent to the waterways of the New York State Canal System or follow remnants of the historic original canals of the early 1800s that preceded today's working Canal System. The Canalway Trail System is comprised of four major segments: the Erie Canalway Trail, including the Old Erie Canal State Park Trail in Central New York; the Cayuga-Seneca Canal Trail, the Champlain Canalway Trail, and the Oswego Canalway Trail. Stretching from Buffalo to Albany the 360-mile Erie Canalway Trail, 277 miles of which are presently open to the public, closely follows much of the present and proposed Empire Corridor alignment. Portions of this canal system are nationally or state-designated heritage areas, parks, and trails.

National Parks and Recreation Areas

There are several types of federally designated parks or recreation areas in the study area, including National Heritage Areas, a National Memorial, several NNLs, a National Wildlife Refuge, National Historic Sites, and National Scenic/Recreational Trails (see the eight federally managed sites shown in Exhibit 4-36). National Historic Landmarks and National Register Historic Districts and sites in

¹²⁵ Deb DiQuinzio, National Natural Landmarks Program, National Park Service Northeast Region, “Moss Island,” E-mail/personal communication to Addie Kim, HNTB Corporation, March 22, 2011; Deb DiQuinzio, National Natural Landmarks Program, National Park Service Northeast Region, “Montezuma Marshes, Bergen-Byron Swamp, and Albany Pine Bush National Natural Landmarks.” E-mail/personal communication to Addie Kim, HNTB Corporation, June 5, 2017.

¹²⁶ Duncan Hay, National Park Service, Northeast Region, “NYSDOT & FRA Compliance (NEPA),” E-mail/personal communication to Addie Kim, HNTB Corporation, March 25, 2001.

the program area are addressed under Section 4.15.3.

- **National Heritage Areas:** Congress established National Heritage Areas to promote historic preservation and an appreciation of the history and heritage of the designated site. National Heritage Areas are administered by state or local governments or non-profit or private corporations, with the National Park Service providing an advisory role. The Empire Corridor traverses through three:
 - **Hudson River Valley National Heritage Area:** Extends from New York City north to Albany, along the Empire Corridor South. The heritage of the region dates back to the Revolutionary War, with several National Historic Landmarks and historic districts, estates of well-known historical figures, scenic parks, and gardens.
 - **Erie Canalway National Heritage Area:** Extends through upstate New York, along most of the central and eastern portions of the Empire Corridor West. This waterway played a key role in turning New York City into our country's most important center for commerce, industry, and finance.
 - **Niagara Falls National Heritage Area:** Stretches from the western boundary of Wheatfield, New York to the mouth of the Niagara River on Lake Ontario, including the community of Niagara Falls at the western end of the Niagara Branch. The region is home to dramatic natural features, rich cultural traditions, and nationally significant historical sites.
- **National Memorial:** Designated by the U.S. Congress for protection as a memorial to a historic person or event.

The only National Memorial within 1,000 feet of the corridor centerline is the **General Grant National Memorial**, also known as Grant's Tomb, the largest tomb in North America. The site is located within Riverside Park overlooking the Hudson River in Manhattan (Milepost 5). Grant's Tomb commemorates the 18th president and general that presided over the Union victory in the Civil War. The site is part of the system of National Parks of New York Harbor.

- **National Natural Landmark (NNL):** The National Registry of Natural Landmarks includes nationally significant geological and biological features. Areas within 1,000 feet of the corridor centerline include:
 - **Moss Island**, near Milepost 216 and Lock 17 on the Erie Canal in Little Falls, Herkimer County.
 - **Albany Pine Bush Preserve**, extends south of the Empire Corridor.
 - **Montezuma Marshes**, located more than 4 miles from the Empire Corridor.
 - **Bergen-Byron Swamp NNL** lies within 1,000 feet from the Alternative 125 corridor, but more than 1,000 feet from the existing Empire Corridor.
- **National Wildlife Refuge:** The National Wildlife Refuge System, managed by the U.S. Fish and Wildlife Service, is the nation's system of public lands and waters set aside to conserve fish, wildlife and plants. The only national wildlife refuge within 1,000 feet of the corridor centerline is the **Montezuma National Wildlife Refuge** (the Approved Acquisition Area for the refuge is located between Mileposts 323 to 326) in Wayne County. The area known as the Montezuma Marshes once drew thousands of waterfowl making their annual fall migration. In 1938, the Montezuma NWR was formed to restore the wetland habitat with impoundments created by development of the Erie Canal, smaller feeder canals, and agricultural development. Today, the refuge consists of 10,000 acres, and accommodates recreational uses.

- **National Historic Sites:** Two National Historic Sites along the banks of the Hudson River in Hyde Park, Dutchess County are within the 1,000-foot buffer area:
 - **Vanderbilt Mansion National Historic Site:** The 50-room Classical-style mansion on 212 acres (near Milepost 80) was built in 1898. Frederick William Vanderbilt, a grandson of “Commodore” Cornelius Vanderbilt – the shipping and railroad magnate and richest man in America during his lifetime, constructed it. Landscaped grounds feature a formal terraced garden, expansive lawns, carriage roads, and a three-mile-long riverside hiking trail.
 - **Home of Franklin D. Roosevelt National Historic Site:** This site covering approximately 800 acres (at Mileposts 77-78) was the birthplace, lifelong home, and burial place of Franklin Delano Roosevelt, America’s 32nd President. The grounds that feature flower gardens, outbuildings, and miles of walking trails. The Rose Garden contains the graves of Franklin and Eleanor Roosevelt.
- **National Scenic/Recreational Trails:**
 - **The Appalachian National Scenic Trail**, a more than 2,180-mile footpath traversing the Appalachian Mountains, extends through the study area at Hudson Highlands State Park.
 - **Old Erie Canal** has also been designated a National Recreational Trail by the National Parks Service.

Appendix G.15 summarizes the publicly owned acreage of all potential 4(f) or 6(f) parkland resources within 1,000 feet of the corridor centerline for the 90/110 and the 125 Study Areas.

State Parks and Recreation Areas

New York State has designated 24 state parks, areas of cultural and historic significance, state historic parks, and state historic sites in the study area that are largely administered by the NYSOPRHP (see Exhibit 4-37 and Appendix G.15). New York state forests and state-owned Wildlife Management Areas are administered by the New York State Department of Environmental Conservation, which administers 16 sites, including three boat launches and a fisherman’s access, in the study area (see Exhibit 4-38).

- **New York State Heritage Areas System** is a state-local partnership established to preserve and develop areas that have special significance to New York State. The purpose of the program is to develop, preserve, and promote the state’s cultural and natural resources as an expression of the state’s heritage.

There are two regional heritage corridors, the **Western Erie Canal Heritage Corridor** and the **Mohawk Valley Heritage Corridor** along the program area. There are six smaller Urban Heritage Areas within 1,000 feet of the corridor centerline:

- **Harbor Park Heritage Area**
- **Ossining Heritage Area**
- **Albany Heritage Area**
- **Schenectady Heritage Area**
- **Rochester-High Falls Heritage Area**
- **Niagara Falls Underground Railroad Heritage Area**
- The **State Parks System** includes state parks, state historic parks and state historic sites that are open to the public as tourist attractions (see Exhibit 4-37). The study area includes 11 state parks, one state park preserve, one state historic park, and six state historic sites. State parks

include the **Old Erie Canal State Historic Park** in Onondaga County (Mileposts 278.3 to 279), Madison County (Mileposts 266.5 to 272), and Oneida County. This 36-mile stretch of the 363-mile Old Erie Canal has been designated a National Recreational Trail by the National Parks Service. The New York State Canal Corporation owns two other canal parks (Guy Park and Lock 9 State Canal Park).

- **State Forests** in New York State administered by the New York Department of Environmental Conservation Division of Lands and Forests include four land classifications, but only two types: **Unique Areas** and **state nature and historic preserves** are present within the study area. **Unique Areas** are defined as parcels of land owned by the state that were acquired due to its special natural beauty, wilderness character, or for its geological, ecological or historical significance for the state nature and historical preserve. The NYSDEC state forests preserves and three unique areas within 1,000 feet of the corridor centerline for both the 90/110 and the 125 Study Areas are shown in Appendix G.15, one of which has received Section 6(f) funding.

Wildlife Management Areas (WMAs) are lands owned by New York State under the control and management of the New York State Department of Environmental Conservation's Division of Fish, Wildlife and Marine Resources. These lands have been acquired primarily for the production and use of wildlife. However, while fishing, hunting and trapping are the most widely practiced activities on many WMAs, they are not limited to these activities. Most WMAs also provide good opportunities for hiking, cross-country skiing, birdwatching, or quiet enjoyment of nature. The seven WMAs within 1,000 feet of the corridor centerline for both the 90/110 and the 125 Study Areas are shown in Appendix G.15, one of which has received Section 6(f) funding.

County/Municipal Parks and Recreation Areas

There are roughly 100 county, municipal, and non-profit parks identified within the study area. Thirteen county-owned parks were identified within 1,000 feet of the corridor centerline of the 90/110 Study Area, of which two have received federal Land and Water Conservation Funding, as shown in Exhibit 4-39 and Appendix G.15. Within the 125 Study Area, nine county owned parks were identified within 1,000 feet of the corridor centerline, one of which is not within the 90/110 Study Area.

Ninety-four municipal parks were identified within 1,000 feet of the corridor centerline of the 90/110 Study Area, and of these, 27 have received Land and Water Conservation Funds, as shown in Exhibit 4-40 and Appendix G.15. Within the 125 Study Area, eighty-four parks were identified within 1,000 feet of the corridor centerline, of which twenty-two have received Land and Water Conservation Funds. More than half of these municipal parks are located in the more densely populated counties closer to New York City. Fifty parks (including one non-profit park) are located in New York, Bronx, Westchester, and Dutchess counties.

4.16.4. Environmental Consequences

Comparison of Alternatives

Review of aerial and parklands mapping indicates that the Base Alternative, Alternative 90A, and Alternative 90B (the Preferred Alternative) would have minimal long-term impacts to parklands and little or no impacts to parklands outside of the right-of-way. These alternatives would largely involve work within the right-of-way, with tracks being added in the location of the former track beds or existing access roads.

Alternative 125 has the greatest potential effect on parks and recreational facilities, with 10 such facilities in 6 counties potentially affected (including an Oneida Nation-owned golf course). With the possible exception of two crossings of the Mohawk River and Erie Canal for Alternatives 90B and 110, only Alternative 110 would have any other potential effect on recreational facilities, potentially affecting one county park. This assessment considered proximity impacts on adjoining parks, beyond direct property impacts, and assesses the parks and recreation facilities in the vicinity of the program elements. Please refer to Exhibit 4-36 to Exhibit 4-40 for a comparison of impacts to parks and recreation areas by alternative study areas. Short-term impacts related to construction are discussed in Section 4.25.3. Appendix G.15 provides further discussion of potential impacts on parks and recreation areas for the other alternatives considered, and the following section addresses potential effects of the Preferred Alternative.

Alternative 90B (Preferred Alternative)

Empire Corridor South

Increased frequency of service could have the potential to incur additional visual and noise impacts from train passbys, however the additional trips represent a minimal increase over current rail traffic that includes frequent Metro-North commuter rail.

Empire Corridor West/Niagara Branch

Improvements for Alternative 90B, the Preferred Alternative, start at MP 160 in the City of Schenectady. Trackwork would extend west from here, crossing over the Mohawk River/Erie Canal on an existing bridge. In the City of Schenectady, Front Street Park and Pool adjoins the south side of the railroad on the south river bank, and the Glenville Bike Trail extends under the bridge on the north river bank, but impacts to the park and trail are not anticipated. Further set back on the southwest side are Riverside Park in Schenectady and Collins Park and Lake in Scotia. At MP 167, the railroad extends north of the Lock 9 Canal Park, which is on the opposite (southwest side) of Route 5, but will not impact the park.

Work that may extend outside of the right-of-way may occur at Amsterdam Station and at MPs 179, 192, and 200 in Montgomery County. Proposed track and station improvements at Amsterdam Station and trackwork at MP 179 are located in the vicinity of the Erie Canal, but should not affect the canal.

In Monroe County, the addition of a fourth track around the Rochester Station could also involve right-of-way impacts (MPs 371 to 376 and MPs 378.2 to 378.6, and MPs 379.15 to 379.6). This work will extend in the vicinity of facilities such as Upper Falls Park in the City of Rochester and will cross the Erie Canal and the Erie Canalway Heritage Trail at MP 374.5, but are not anticipated to directly affect parklands. The potential for impacts at the canal crossing will be evaluated as designs are advanced in the Tier 2 assessment.

Double track along the Niagara Branch between MPs QDN2 and QDN7 would extend in proximity to Front Park and La Salle Park in Buffalo, but no direct impacts outside the right-of-way are anticipated that could affect these parklands. Additional train passbys have the potential for additional visual and noise impacts, but the increased service frequency represents a minimal increase.

4.16.5. Potential Mitigation Strategies

Mitigation for impacts of the Preferred Alternative, Alternative 90B, on parklands and recreation

areas will include avoiding and minimizing impacts to the extent practicable and minimizing any required right-of-way takings (e.g., at canal crossings). Compliance with the requirements of Section 4(f) of the U.S. Department of Transportation Act requires that alternatives that avoid or minimize impacts be evaluated, and, if impacts are proposed, mitigation measures be developed, in consultation with officials with jurisdiction. If parklands that have received Land and Water Conservation Fund Act grants will be converted, Section 6(f) requires that recreation property of equal fair market value and usefulness be provided as compensation.

Mitigation measures may include permanent measures, such as providing trail connections or compensatory parkland, or construction mitigation, such as maintaining trail or park access during construction or using time-of-year restrictions on construction work. Other considerations will include minimizing potential visual and noise impacts on adjoining parks or recreation areas, and further assessments of these impacts of the Preferred Alternative, Alternative 90B, and mitigation measures will also be advanced in Tier 2.

4.16.6. Future Analysis

For the Preferred Alternative, Alternative 90B, the Tier 2 assessments will include a thorough inventory of publicly owned parks and recreation facilities, as well as non-profit parklands that may be potentially affected. Detailed property mapping and information on the extent of public access, use and ownership for parks and recreation areas will be obtained. Further discussion of Section 4(f)/Section 6(f) evaluations is presented in Section 4.23, “Section 4(f)/Section 6(f).”

New York State places similar restrictions on all municipal parklands, which cannot be converted to a non-park use without prior approval from the New York State Legislature (referred to in New York as parkland alienation). Further research will be performed to identify municipal parklands, and if a conversion may occur, requirements for legislative approval for parkland alienation will be identified as part of Tier 2.

4.17. Visual Resources

4.17.1. Regulatory Context

The FRA Procedures for Considering Environmental Impacts states that evaluation of environmental impacts should include a consideration of aesthetics and design quality. Under the topic of aesthetic environment and scenic resources, the FRA NEPA guidance states that: *“The EIS should identify any significant changes likely to occur in the natural landscape and in the developed environment.”*

4.17.2. Methodology

The assessment considers the visual impacts of high-speed rail trains for all viewer groups, including adjacent land users (views of the project) as well as high-speed train users (views from the train). The visual assessment has been developed through the use of readily available Geographic Information System (GIS) data sets and aerial imagery. Field visits have not been conducted to verify the data for the Tier 1 EIS due to the length of the corridor and numerous areas where there will be no change to the existing condition.

The assessment identifies visual characteristics of the existing view from and of the railroad, such as elevated structures, water crossings, and presence of trees and vegetated buffers and urban

development. In addition, the assessment identifies those viewsheds for affected groups sensitive to visual changes, such as residents, park users, and travelers along the major interstates crossing the proposed facility. The “Existing Conditions” section identifies sensitive receptors in the program area and characterizes the area in terms of built environment and natural environment. For the 125 Study Area, since the exact alignment would be further refined and defined in Tier 2, a more generalized assessment of viewsheds of and from the railroad was performed.

4.17.3. Existing Conditions

Views of and views from the program area were considered, although in many rural locations (particularly along Empire Corridor West) the railroad itself is not visible or a prominent visual element unless it follows highways, waterways, or other vantage points where there are adjoining uses.

There are a number of designated scenic areas along the railroad where the railroad extends along the Hudson River, Erie Canal/Mohawk Valley, and Lake Erie/Niagara River. These include:

- Six **Scenic Areas of Statewide Significance** (Hudson Highlands, Estates District, Esopus/Lloyd, Ulster North, Catskill-Olana, Columbia-Greene North SASSs) in the study area are designated under the state’s coastal program, as described under Section 4.11, “Coastal Resources.”
- Three **National Heritage Areas** (Hudson River, Erie Canalway, and Niagara Falls), and numerous **federal and state parks and wildlife refuges** (described in Section 4.16, “Parks and Recreational Areas”).
- The **Hudson River** has been designated as an **American Heritage River**, one of fourteen in the country, due to its rich history and substantial environmental recovery. The rail line between New York City and Albany generally parallels the Hudson River, in many areas within 300 feet of the river’s edge. The Hudson River is also designated by the state¹²⁷ as a Hudson River Greenway Water Trail, and the Designated Hudson River Valley Greenway Trails is a system of park trails and also includes New York State Bike Route 9.
- The **Mid-Hudson Historic Shorelands Scenic District** designated under Article 49 of the New York Environmental Conservation Law extends between Hyde Park (MP 80) and Germantown (MP 140).
- The **Mohawk Towpath Scenic Byway**, a National Scenic Byway that follows the Erie Canal in a portion of Schenectady County, extends parallel and close to the Empire Corridor over a small portion (0.2 mile) in the City of Schenectady.
- The **Revolutionary Trail**, a New York State designated **scenic byway**, generally parallels the rail corridor from the village of Scotia in Schenectady County to the City of Rome in Oneida County.
- The **U.S. Route 20 Scenic Byway**, a New York State designated scenic byway, generally parallels a roughly 8.5-mile section of the 125 Study Area, where the scenic route originates in Duanesburg and extends west 108 miles.
- The **Great Lakes Seaway Trail, a National Scenic Byway**, is in the vicinity of the rail corridor as it extends from Buffalo north through Tonawanda to Niagara Falls.

¹²⁷ *Hudson River Valley Greenway Act of 1991*. New York State Legislature. Revised July 2007. Accessed May 10, 2012. <[http://www.hudsongreenway.ny.gov/Libraries/PDF s/GreenwayAct Legislation revised as of July 2007_2011.sflb.ashx](http://www.hudsongreenway.ny.gov/Libraries/PDFs/GreenwayAct%20Legislation%20revised%20as%20of%20July%202007%2011.sflb.ashx)>.

Empire Corridor South

Views of the Railroad

The most prominent visual element within the seven counties along the Empire Corridor South is the Hudson River to the west of the tracks. The tracks generally follow the eastern shoreline of the Hudson River, although views of the river are cut off through some of the towns, industrial areas, and natural points of land, it visually unifies the 142-mile corridor. Views of the railroad in most locations along the Empire Corridor South where it follows the eastern bank of the Hudson River are more prominent from bridges and other points on the river, as the railroad forms an integral linear element of the landscape where it borders along the river's edge. The railroad is prominently visible along the west river bank from major bridges, including:

- The Tappan Zee Bridge (I-287),
- The Newburgh-Beacon Bridge (I-84),
- The Bear Mountain Bridge (U.S. Routes 202/6),
- The Mid-Hudson Bridge (U.S. Route 44 and State Route 55),
- The Kingston-Rhinecliff Bridge (State Route 199),
- The Rip Van Winkle Bridge (State Route 23),
- The Castleton Bridge (Berkshire Connector of the New York State Thruway), and
- A major pedestrian bridge at the Walkway over the Hudson (a former rail bridge).

The railroad itself is a particularly prominent visual element in the landscape where it crosses waterways on bridge structures and causeways. The Spuyten Duyvil Bridge swing span bridge over the Harlem River, the rail bridges over Croton Bay and Peekskill Bay, the New Hamburg Railroad Bridge over the Wappinger Creek, and the Livingston Avenue swing span over the Hudson River are several of the notable and largest bridge crossings along the Empire Corridor South.

Because of the extensive width of the Hudson River along the railroad, where it extends along the riverbank, the railroad is most visible from the opposite river bank when trains are passing. Where the railroad extends inland, it is visible only from adjoining roadways and developments. Even in some of the more densely populated areas, such as New York City, the views of the railroad can be obscured by its location in tunnels, its location in cuts, or by vegetation particularly where the railroad extends along the river's edge.

Views from the Railroad

The detailed county by county description of views from the railroad is presented in Appendix G.16. Where the railroad runs aboveground, the viewshed in **Manhattan** is entirely urban, with views of adjoining highways, bridges, multi-story buildings, as well as parks and playgrounds. The Hudson River includes greenery and dominates the views to the west, and the landform is flat.

In the Hudson River Valley, the railroad closely follows the edge of the Hudson River in many locations. Views to the west are of the Hudson River, and of the forested buffer on both sides of the rivers. The railroad passes through a mix of urban downtown areas, particularly near many of the station locations, such as Yonkers in **Bronx County**, and rural residential landscapes. The views from the railroad include high bridges over the Hudson River, including the I-95/George Washington Bridge and the Tappan Zee Bridge (I-287) and the railroad that extends along the opposite river bank.

Further north, the views transition from a primarily urban landscape to a rural forested landscape with coves and high bluffs. Further north in **Westchester County**, the railroad extends inland on

curves and through the scenic areas within the Hudson Highlands, where there are several short tunnels and the railroad is flanked by steep terrain. There are also crossings of inlets and bays where the railroad is built on causeways that include bridges to drain the associated rivers and streams. In areas where the railroad heads inland, the views include forest or marsh areas. In **Putnam County**, scenic views of forested bluffs include the West Point Military Academy on the west river bank and the railroad continues through Hudson Highlands State Park, before passing through two tunnels before continuing into Dutchess County.

In **Dutchess County**, the railroad continues to closely border the east river bank and passes through Hudson Highlands State Park and crosses through the Estates District and extends in the vicinity of a number of historic estates and parks continuing north between Hyde Park and Staatsburg. The railroad continues on a causeway across Vanderburgh Cove, passing through Rhinecliff-Kingston Station, before passing through a tunnel and over another causeway over Tivoli Bay, another Hudson scenic district.

In **Columbia County**, the railroad continues to closely follow the east river bank particularly on the south side of the county. Views from the railroad are dominated by forested vegetation, open space, and the Hudson River and its islands and marshes on the southern half of the county. The railroad extends past several islands where it extends along the shoreline. To the north, the railroad passes another island (Middle Ground Flats), north of the Hudson Station, where the railroad extends across a long causeway over North Bay. To the north, the railroad extends past the Hudson River Islands, where it extends on causeway over several coves.

The viewshed in the **Rensselaer County** section varies from forested and agricultural to urban, with the urban areas clustered in and around the city of Rensselaer at the north end of the county. The southern third of Rensselaer County continues alongside the island in the Hudson River (Schodack Island/Castleton Island State Park. The railroad extends under the Castleton Bridge (Berkshire Connector of the New York State Thruway) and continues along the bank of the Hudson River past the north end of Schodack Island, passing through the village of Castleton-on-Hudson. Just outside the city of Rensselaer, the adjoining uses along the river and extending into the city include industrialized uses and fuel tank farms. Approaching the Albany-Rensselaer Station, there are views of the Albany skyline across the river, and adjoining urbanized areas also include residential neighborhoods and office buildings.

Empire Corridor West/Niagara Branch (90/110 Study Area/125 Study Area)

Views of the Railroad

The predominant landscape types along the majority of Empire Corridor West are farmlands and forestland. The views of the railroad in the thirteen or fourteen counties along the Empire Corridor West/Niagara Branch (for both the 90/110 Study Area and the 125 Study Area) are limited to some degree since this area, outside the cities and towns along the corridors, is predominantly rural agricultural, with more limited opportunities for views by passerbys and residents. Moreover, due to the schedule for the Amtrak service and speeds of the trains, the Amtrak trains are not expected to disrupt views of the rural landscape, as these would be quick and infrequent passbys providing fleeting views of the train.

Vantage points of the railroad are limited to adjoining roads or developments. Outside of urbanized areas, the railroad is visible where it parallels or crosses portions of the New York State Canal System and the New York State Thruway (I-90) and Route 5. In many locations, even where the railroad adjoins these features, vegetation obscures existing views of the railroad tracks from adjoining

roadways, canals, and development. The majority of the landscape is relatively flat, particularly in rural agricultural areas, and the railroad tracks may only be visible when trains are passing, particularly in areas where vegetation screens the right-of-way from view.

In Erie and Niagara Counties, the railroad extends close to Lake Erie and Niagara River, and is an integral element of the waterfront in these locations.

Several of the notable bridges where the railroad is more visible include the Mohawk River in Schenectady, Erie Canal along the south side (outlet to) Onondaga Lake, and the bridge over Canada Creek, the bridge over the Montezuma Marshes near Savannah, and the Genesee River Bridge in Rochester. Where these bridges are in remote locations (Montezuma Marshes) or are constructed at close to the existing grade, they may not necessarily be a prominent visual element of the landscape to users. However, even where vegetation obscures views of the railroad, the tracks remain visible at overpassing roadway bridges, and the rail bridges are visible at underpassing roadways.

Views from the Railroad: 90/110 Study Area

The detailed county by county description of views from the railroad is presented in Appendix G.16 and is summarized below. After crossing the Livingston Avenue Bridge into **Albany County**, the viewshed includes parks/greenways along the river and industrialized waterfront development in the city of Albany. The eastern half of the county includes adjoining or overpassing highways and interchange ramps for I-90 (New York State Thruway) and I-87 at the crossing just past the city limits.

In the city of Schenectady in **Schenectady County**, the views from the train include views of institutional uses and the downtown business district. To the north, the railroad extends through increasingly more rural forested areas with pockets of farmlands to the north. Views includes intermittent views of Route 5 and the Mohawk River/Erie Canal where the railroad parallels or crosses these features.

The eastern half of the Empire Corridor West is quite scenic as the railroad closely follows the Mohawk River/Erie Canal to Herkimer. In **Montgomery County**, the railroad closely parallels Route 5 and the Mohawk River/Erie Canal throughout much of the county. Views throughout the county are of predominantly rural agricultural, forested, and residential lands. Urban viewsheds are largely limited to the city of Amsterdam, with the Amsterdam Amtrak Station; the village of Fonda; and the village of St. Johnsville. The railroad continues to parallel Route 5 and the Mohawk River/Erie Canal throughout much of **Herkimer County**. The viewshed along the railroad consists of forest, agricultural, and rural residential uses outside the cities of Little Falls and Herkimer.

In **Oneida County**, the railroad closely adjoins a section of Route 5S to the west, passing into industrialized areas surrounding the Utica Boehlert Transportation Center at Union Station at the northern edge of city. The railroad is set back from the Erie Canal in Rome and further west, the railroad continues through farmlands, wetlands, forestlands. Entering **Madison County**, the railroad extends through the less developed areas of the city of Oneida. The viewshed in the county is predominantly forest land and agricultural land with urban development concentrated in the middle of the county in the village of Canastota. The railroad adjoins the Old Erie Canal through portions of the county.

Crossing into **Onondaga County**, the viewshed continues to be primarily agricultural and forested and includes views of the Erie Canal and Onondaga Lake. The railroad extends through increasingly urbanized and industrial/commercial areas in and around the city of Syracuse, with views of the

Syracuse Regional Transportation Center, Alliance Bank Stadium, Dewitt Yard and the State Fairgrounds, west of the city.

In **Cayuga and Wayne counties**, the primary viewshed consists of agricultural and forest lands with rural, low-density development, and views of the Erie Canal where the railroad adjoins or crosses the canal in several locations. In this project segment, the railroad also crosses marshes within the Montezuma National Wildlife Refuge.

In **Monroe County**, the viewshed includes the Erie Canal, where it adjoins the railroad and areas of forested/undeveloped areas with lower density development outside of the city of Rochester. Approaching the city, the views become increasingly urban and dominated by hardscape, with parking lots, businesses, and industries closely adjoining the railroad. The viewsheds in the city include Rochester Station, railyard, the Rochester public market, and Frontier Field other crossing highways.

In **Genesee County**, the viewshed is primarily agricultural with smaller areas of forest and views of residential and scattered commercial/industrial uses. In **Erie County**, the viewshed from the railroad consists primarily of agricultural and forested lands. The viewshed becomes increasingly urban approaching the city of Buffalo where the railroad passes by Buffalo-Depew and Buffalo Exchange stations, with views of Frontier railyard, Buffalo Terminal, and Coca Cola Field.

Entering **Niagara County**, the railroad passes through the Gateway Park on the Erie Canal and continues on a raised forested embankment through densely developed neighborhoods in the city of North Tonawanda, and continues at-grade through less densely developed industrial areas approaching the Niagara River riverfront to the north. Approaching the city of Niagara Falls, the viewshed becomes more urban, and the railroad crosses under I-190 through industrialized areas before extending north of the Niagara Falls yard to the Niagara Falls International Railway Station and Intermodal Transportation Center (Niagara Falls Station) in downtown.

Views from the Railroad: 125 Study Area

The detailed county by county description of views from the railroad is presented in Appendix G.16. In **Rensselaer County** (MPs QH142 to QH143), Alternative 125 would follow along the existing the Empire Corridor north to the Albany-Rensselaer Station, then would continue south to a new crossing of the Hudson River. The views along this mile would be largely residential and industrial, along with the views of the Hudson River to the west.

In **Albany County**, the 125 Study Area extends through industrialized waterfront, then would follow interstate highways between the I-787 convergence with the New York State Thruway (I-87) and the Schenectady County line. Entering **Schenectady County**, the 125 Study Area continues to follow the New York State Thruway (I-90), and the corridor extends north of I-90 alongside industrial and residential areas, passing along the outskirts of the more urbanized area in the town of Rotterdam.

The landscape through the remainder of Empire Corridor West is primarily rural or undeveloped with, agricultural lands or low-density development. In **Schoharie County**, the corridor continues adjacent to, and south of, U.S. Route 20, a New York State scenic byway, over a distance of approximately 8.5 miles. The corridor extends through primarily forested and agricultural lands. In **Montgomery County**, the 125 Study Area extends through predominantly rural agricultural and forested areas that bypass urban areas and villages. In **Herkimer County**, the viewsheds consist predominantly of rural agricultural and forestlands, with the majority of urban views where the

corridor crosses the southern outskirts of the village of Ilion. The 125 Study Area would provide views of primarily rural agricultural and forested lands in **Oneida County**. In **Madison County**, the corridor would provide views of largely rural forested and agricultural lands, passing through relatively undeveloped lands on the outskirts of the city of Oneida.

In **Onondaga County**, the 125 Study Area provides views of primarily agricultural and forested areas where it extends through the eastern part of the county, rejoining the 90/110 Study Area in the village of Minoa on the south side of the Dewitt Rail Yard. From this point, the views are the same as for the 90/110 Study Area where it extends through downtown Syracuse, as described in the previous section. Outside and west of the city, just east of the Camillus Airport, the 125 Study Area deviates from the 90/110 Study Area to the northwest, extending through primarily rural agricultural and forested lands.

In **Cayuga and Wayne counties**, the viewshed consists primarily of rural agricultural and forested lands. In **Monroe County**, the 125 Study Area extends through primarily residential neighborhoods, crossing Route 31F, which is fronted by commercial uses before rejoining the 90/110 Study Area near the Fairport Village line and following the existing railroad where it extends through the city of Rochester, as described above. The 125 Study Area diverges from the 90/110 Study Area just east of the I-490 crossing west of the city of Rochester, where more urban/industrial viewsheds closer to the interstate transition to largely forested viewsheds, with more rural agricultural lands to the west.

In **Genesee County** and the eastern portion of **Erie County**, the viewsheds consist primarily of rural agricultural and forested rural landscapes. Where the 125 Study Area turns south, crossing the New York State Thruway, views of more urban, commercial/industrial areas are more prominent along Route 31 and where the corridor merges with the 90/110 Study Area approaching Cheektowaga and the Buffalo-Depew Station.

4.17.4. Environmental Consequences

Comparison of Alternatives

Long-term visual impacts will be minimal under the Base Alternative, Alternative 90A, and the Preferred Alternative, Alternative 90B. These alternatives would largely involve work within the right-of-way, with tracks being added in the location of the former track beds or existing access roads. The proposed work will include the addition of track, as well as maintenance service roads in selected areas.

Alternative 110 would involve a greater degree of long-term visual impacts with greater displacements and tracks extending outside of the right-of-way, and Alternative 125 would involve the greatest visual impacts, with a new, grade-separated, electrified corridor (with overhead catenary) between Albany-Rensselaer Station and Buffalo. The Preferred Alternative will involve lesser impacts than these Build Alternatives, but comparatively more impacts than the Base or 90A Alternatives. Short-term impacts related to construction activities are discussed in Section 4.25.3. Appendix G.16 provides further discussion of potential visual effects of the other alternatives considered, and the following section addresses potential effects of the Preferred Alternative.

Alternative 90B (Preferred Alternative)***Empire Corridor South***

For Alternative 90A improvements included in the Preferred Alternative, visual impacts are not anticipated to occur. It is anticipated that work will be contained within the right-of-way, and, for the most part, for track and signal improvements, no significant changes in the visual appearance of railroad facilities, or views from the railroad, are anticipated. There are six Scenic Areas of Statewide Significance in the vicinity of these Alternative 90B improvements. As described in detail under Section 4.11.4 (“Coastal Resources”), no changes in the visual quality of these SASSs would occur as a result of Alternative 90B.

Replacement of the Livingston Avenue Bridge may also change the appearance of this crossing, depending on the configuration of the improved historic rail bridge. A rehabilitated structure or structure with a similar design and height would involve less of a change in the visual appearance of the bridge. A change in the appearance or construction of the bridge may not involve an adverse aesthetic impact, but may change the historic contextual appearance of the bridge.

Empire Corridor West/Niagara Branch

The impacts of the Preferred Alternative include impacts from Alternative 90A station projects. As part of Alternative 90B, the following visual changes would occur:

- New station buildings would be constructed at Amsterdam and Buffalo-Depew stations. These station improvements proposed under Alternative 90B are anticipated to improve the appearance of these facilities.
- The additional track improvements for Alternative 90B, the Preferred Alternative, would involve a nominal change in the appearance of the railroad, where areas of third and fourth tracks are proposed to be added, as an additional third or fourth track will likely not be highly visible. In many locations, the tracks are not visible from adjoining properties or vantage points, unless the trains are running on them, or the right-of-way is screened by vegetation, buildings, or slopes. The views from the tracks should not change markedly with the proposed improvements. However, the additional tracks may involve clearing of forest, or property changes/impacts, which may change views of and from the tracks. There would also be more frequent service than for the Base Alternative (although the same frequency of service as Alternative 90A), and trains running on the new tracks would be closer to adjoining properties. Also, modifications to some bridges may be required, which could involve nominal changes in the appearance of the affected crossings.
- The Revolutionary Trail Scenic Byway (Route 5/29) extends alongside the length of the Empire Corridor and the Mohawk River/Erie Canal from Route 5 in Schenectady County to Herkimer, then follows Route 5S and the Erie Canal to Utica and continues northwest along Route 49 and the Erie Canal to Rome in Oneida County. Portions of Route 5 would need to be relocated, but the relocation is anticipated to be a relatively minor in nature and moved only a short distance from the existing route. Therefore, Alternative 90B would not affect the scenic qualities of the byway and the setting.
- Alternative 90B proposes three flyovers along the corridor, at MP 279, MP 366, and MP 427. The first flyover (MP 279) would extend through lightly forested and rural agricultural land, with scattered residences set back at least 500 feet and an at-grade road crossing set back 700 feet. Currently it is not known how tall or extensive the flyovers will be, but this would introduce a

new visual element that may not be visible from the closest houses, depending on the lateral and vertical extent of the structure.

- The second flyover (MP 366) is surrounded by lightly forested land, with residential areas just a few hundred feet southwest of the existing railroad and parkland to the north. This flyover will be situated north of the I-490 & 441 interchange. Depending on the height of the flyover, the flyover may be visible from residential areas and the adjoining parkland, and would introduce a new visual element that would be more prominent than the at-grade railroad.
- Only the 90B Alternative will have a flyover at MP 427, one mile west of the Buffalo-Lancaster Airport. The views from the railroad would primarily be open fields and manufacturing and distribution plants. This would introduce a new visual element, but the affected area is primarily industrial or undeveloped. The railroad is set back approximately 1,000 feet from Walden Avenue, to the north, thereby limiting views from residential properties.
- Double track along the Niagara Branch between MPs QDN2 and QDN7 is proposed, but is anticipated to be contained within the right-of-way in this heavily urbanized area.

4.17.5. Potential Mitigation Strategies

The visual impacts of the program for the Preferred Alternative, Alternative 90B, can be minimized through design of more visually prominent facilities, such as stations and bridges, to improve the aesthetic characteristics. In the area of canal crossings and historic parks, design of bridge abutments, retaining walls, and other structures can consider aesthetic treatments to be consistent with the park environs and setting. Use of vegetated buffers can effectively screen the rail facilities from adjoining areas where there is adequate room for plantings. Consultation with agencies with jurisdiction over the canals and parks would be performed, as appropriate, to obtain input into the development of improvement project design concepts.

4.17.6. Future Analysis

The Tier 2 analysis will consider the visual impact and characteristics in the planning and design of the facilities proposed for Alternative 90B, the Preferred Alternative. The focus would be on design of above ground facilities, which would be more visually-prominent, such as elevated sections, flyovers, stations, and bridges, and areas of visual sensitivity, such as canal crossings, designated scenic areas and parks.

4.18. Farmlands

4.18.1. Regulatory Context

The Federal Farmland Protection Policy Act (FPPA) protects certain soil types which do not have to be currently used for cropland, but excludes urbanized areas. For the purpose of FPPA, farmland includes prime farmland and land of statewide importance.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forest land, or other land, but it is not urban or built-up land or water areas. It has the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops when treated

and managed, including water management, according to acceptable farming methods.

Farmland of statewide importance is land other than prime farmland but that is also highly productive. This is land, in addition to prime farmland, that is of statewide importance for the production of food, feed, fiber, forage, and oil seed crops.

The State of New York farmland protection program includes the Agricultural District Law (Agriculture and Markets Law- Article 25-AA enacted in 1971) that created 341 agricultural districts containing approximately 21,500 farms (covering about 30% of the state) by April 2002. This protection also mandates that state agencies and local governments and public benefit corporations avoid or minimize impacts on farmland operations within agricultural districts for projects that may involve farmland acquisition or publicly funded construction.

4.18.2. Methodology

Actively farmed areas were identified through review of the U.S. Department of Agriculture 2009 croplands and aerial photography. Federally protected prime farmland and farmland of statewide importance for study areas within 300 feet of the corridor centerline for all alternatives were characterized using available soil survey mapping.

Prime farmland and farmland of statewide importance were initially identified through review of soil survey mapping prepared by the Natural Resources Conservation Service, and the 2010 Census-defined urbanized areas were overlaid with this to exclude urbanized areas. The definition of farmland under the Federal Farmland Protection Policy regulations (7 CFR 658.2) states that *“Farmland’ does not include land already in or committed to urban development or water storage. Farmland ‘already in’ urban development or water storage includes all such land with a density of 30 structures per 40-acre area. Farmland already in urban development also includes lands identified as ‘urbanized area’ (UA) on the Census Bureau Map, or as urban area mapped with a ‘tint overprint’ on the USGS topographical maps, or as ‘urban-built-up’ on the USDA Important Farmland Maps.”*

The state-designated Agricultural Districts were identified using information obtained from the New York State Department of Agriculture and Markets and the New York State GIS Clearinghouse. The districts for study areas within 300 feet of the corridor centerline for all alternatives were characterized, without consideration given to whether these districts were within Census-defined urban areas.

Impact assessment focused on areas where design located tracks or maintenance service roads outside of the right-of-way, and aerial photos and protected farmland mapping were reviewed to identify potential farmland impacts in these locations.

4.18.3. Existing Conditions

Exhibit 4-21 shows that the 125 Study Area contains roughly twice as much prime farmland as the 90/110 Study area. Appendix G.17 presents more detailed information on prime farmlands, including locations of prime farmlands, agricultural districts, and croplands.

Within the 90/110 Study Area, twenty counties contain approximately 4,015 acres of prime farmland (and an additional 1,984 acres if drained) within 300 feet of the corridor centerline, excluding urbanized areas (as defined by the 2010 U.S. Census). The non-urbanized portion of the study area

contains approximately 2,040 acres of farmland of statewide importance. This study area includes approximately 3,667 acres of state-designated Agricultural Districts. The rural areas along Empire Corridor West and Niagara Branch contain the majority of farmland within the study area (approximately 90 percent of both prime farmland and Agricultural Districts).

Exhibit 4-21—Federally and State-Designated Farmlands in the 90/110 and 125 Study Areas

Counties	Prime farmland soils (acres)		Prime farmland, if drained (acres)		Farmland of Statewide Importance (acres)		Agricultural Districts (acres)	
	90/110 mph	125 mph	90/110 mph	125 mph	90/110 mph	125 mph	90/110 mph	125 mph
New York	0	0	0	0	0	0	0	0
Bronx	0	0	0	0	0	0	0	0
Westchester	59	59	2	2	40	40	0	0
Putnam	9	9	1	1	1	1	0	0
Dutchess	120	120	21	21	233	233	113	113
Columbia	69	69	7	7	102	102	148	148
Rensselaer	148	148	0	0	17	17	126	126
Albany	8	64	0	0	26	89	0	0
Schenectady	163	56	0	403	39	263	12	159
Schoharie		132		104		79		25
Montgomery	484	56	6	770	88	488	610	1,078
Herkimer	328	216	4	286	19	460	159	82
Oneida	295	827	270	357	87	111	24	374
Madison	133	244	193	60	154	335	132	366
Onondaga	351	473	256	140	169	319	39	464
Cayuga	266	362	24	90	284	160	223	806
Wayne	609	1,246	138	298	268	271	1,004	2,214
Monroe	155	215	214	76	33	43	118	267
Genesee	755	1,002	463	427	338	369	650	1,476
Erie	60	243	332	283	133	80	225	384
Niagara	3	3	52	52	9	9	84	84
TOTAL	3,295	4,522	1,686	3,017	1,679	2,993	3,667	8,164
Note: The 90/110 Study Area is used for analysis of Alternatives 90A, 90B, and 110 and consists of the existing 464-mile long Empire Corridor alignment. The 125 Study Area is used for analysis of Alternative 125 and consists of portions of the existing Empire Corridor and new alignment and is 450 miles long. The study area width is defined as being within 300 feet of the corridor centerline.								

Source: Natural Resources Conservation Service, New York Department of Agriculture and Markets, New York State GIS Clearinghouse

Within the 125 Study Area, twenty-one counties contain approximately 5,544 acres of prime farmland (and an additional 3,377 acres of prime farmland, if drained) within 300 feet of the corridor centerline. The non-urbanized portion of the study area contain approximately 3,470 acres of farmland of statewide importance. This study area includes approximately 8,164 acres within state-designated Agricultural Districts. The rural areas along the Empire Corridor West and Niagara Branch within the 125 mph study area contains the majority of farmland (approximately 93 to 95 percent of prime farmland and Agricultural Districts).

Empire Corridor South

The Empire Corridor South extending north from (and including) New York through the Hudson Valley to Rensselaer County includes three urbanized counties. All of the Build Alternatives follow the existing Empire Corridor South for the majority of its length, deviating only in Rensselaer County, where Alternative 125 splits off 1.6 miles south of where the existing Empire Corridor turns to the west. The study area within the seven counties of Empire Corridor South contains 405 acres of prime farmland (31 additional acres of prime farmland if drained), 393 acres of farmland of statewide importance, and 387 acres of Agricultural Districts.

Empire Corridor West/Niagara Branch: 90/110 Study Area

The Empire Corridor West and Niagara Branch extending west of (and including) Albany to Niagara Falls includes large tracts of agricultural land within the 600-foot-wide study area. The study area in the thirteen counties contains a total of 3,610 acres of prime farmland, an additional 1,952 acres of prime farmland if drained, and 1,647 acres of farmland of statewide importance. Approximately 3,280 acres of the study area between (and including) Albany County and Niagara County are within state-designated Agricultural Districts.

Empire Corridor West/Niagara Branch: 125 Study Area

The 125 Study Area follows a more direct route between Rensselaer and Buffalo, which bypasses several of the major metropolitan areas and stations sites (Schenectady, Amsterdam, Utica, and Rome) along the Empire Corridor West and extends through more rural and agricultural areas. Within the 600-foot wide study area of the 125 Study Area in the Empire Corridor West/Niagara Branch, there are fourteen counties containing a total of 5,139 acres of prime farmland, an additional 3,346 acres of prime farmland if drained, and 3,076 acres of farmland of statewide importance. Approximately 7,779 acres of the study area from Albany County and Niagara County are within state-designated Agricultural Districts.

4.18.4. Environmental Consequences

Comparison of Alternatives

The following sections describe impacts to mapped areas of prime farmland soils (including soils of statewide importance) and state-designated Agricultural Districts. However, review of aerial mapping indicates that the Base Alternative, Alternative 90A, and the Preferred Alternative, Alternative 90B, would have minimal long-term impacts to actively-farmed areas and little or no impacts to active farms outside of the right-of-way. These alternatives would largely involve work within the right-of-way, with tracks being added in the location of the former track beds or existing access roads. The proposed work will include the addition of track, as well as maintenance service roads in selected areas. Alternative 110 may have isolated impacts to actively farmlands in one or more locations. Alternative 125 would involve substantially greater impacts to farmland as it

extends on new alignment through primarily rural areas. Short-term impacts related to construction activities are discussed in Section 4.25.3. Appendix G.17 presents additional information on potential impacts of the other alternatives considered, and the following section addresses potential effects of the Preferred Alternative.

Alternative 90B (Preferred Alternative)

Empire Corridor South

Along Empire Corridor South, farmland impacts are not anticipated to occur. The impacts of the Preferred Alternative include impacts from the following Alternative 90A projects. With Alternative 90B, signal improvements proposed along 43 miles (MPs 32.8 and 75.8) extend through urban areas (Westchester and Dutchess Counties) with limited areas of prime farmland in Putnam County. Only one location is close to an Agricultural District, but work will be contained within the right-of-way and no protected farmland impacts are expected.

Empire Corridor West/Niagara Branch

The impacts of the Preferred Alternative include impacts from the following Alternative 90A projects.

- The eastern five miles of approximately 10 miles of third track between MPs 169 and 178.5, that include Amsterdam Station improvements, in eastern Montgomery County and extending into Schenectady County includes areas of prime farmland and extends close to Agricultural Districts in a few locations. However, this work could be contained within the existing right-of-way.
- Further to the west, the addition of a third track along 11 miles located largely west of the designated urban area around Rochester, and work outside of the right-of-way may affect prime farmlands and Agricultural Districts. However, the majority of the work would be located within the right-of-way.
- Although the proposed double track (MPs QDN17 to QDN23.2) along the Niagara Branch is located within an urban area, work outside the right-of-way in this area may affect Agricultural Districts.

Improvements for the Preferred Alternative, Alternative 90B, start at MP 160 in the City of Schenectady, which is within an urban area that extends west to MP 168.

- The third track at the connection to the Selkirk Branch at MP 168.3 in Schenectady County may affect mapped areas of prime farmlands and borders on urban area, south of the railroad.
- Work that may extend outside of the right-of-way may occur at Amsterdam Station and at MPs 179, 192, and 200 in Montgomery County. At MP 192, track realignment at a curve would extend outside of the right-of-way, but this is outside (but close to) prime farmlands and an Agricultural District.
- Construction of a fourth track and maintenance service road may affect a few prime farmlands in Herkimer County near the Montgomery County Line (MPs 210.5 to 214.8). A maintenance service road in this area (MPs 214.25 and 214.75) may affect an Agricultural District.
- In Genesee County, the addition of a third track and maintenance service road (MPs 397 to 397.5) may occur in close proximity to or may encroach on actively farmed fields that are part of an Agricultural District.

There are also locations where relocations of adjoining roadways may result in indirect impacts to farmlands, but these locations would be better defined in the Tier 2 assessments.

4.18.5. Potential Mitigation Strategies

During the Tier 2 assessment, refinements in design and mapping for Alternative 90B, the Preferred Alternative, will be performed and the project development will incorporate avoidance and minimization of farmland impacts to the extent practicable. This will include avoidance of active farms, prime farmlands, and parcels included within Agricultural Districts to the extent practicable. The Preferred Alternative, Alternative 90B, will result in lesser or no impacts on active farmlands.

If farmland impacts will occur, NYSDOT will comply with the FPPA for acquisition of prime farmlands. NYSDOT will also comply with the State Agriculture and Markets law for work affecting a designated Agricultural District, if any impacts will occur. The U.S. Department of Agriculture (USDA) and the New York State Department of Agriculture and Markets will be consulted regarding farmland impacts and mitigation strategies that are appropriate.

Potential farmland mitigation measures that can be developed in coordination with the federal/state agencies and landowners can include measures such as avoidance and minimization through design measures, such as use of steeper slopes, minimizing embankments, or relocating structures. Other potential mitigation measures that might be considered include:

- installation of cattle (or other) animal crossings,
- improvements to an existing or creation of new farmland access road for farm equipment and vehicles,
- planting of windbreaks to protect crops from wind damage,
- reconfiguring any affected subsurface drainage or irrigation systems or otherwise improving drainage, and
- staging activities to occur at the end of harvest.

Farmland conversion mitigation can include creating conservation easements on alternative farmland parcels or paying a fee to protect farmland.

4.18.6. Future Analysis

Tier 2 assessments will refine the Tier 1 impact assessment based on design for the Preferred Alternative, Alternative 90B, and site-specific mapping and delineation of existing and required rights-of-way. If significant conversions of prime farmland and impacts on state Agricultural Districts are anticipated in the Tier 2 assessment, alternatives actions, locations, and designs will need to be further explored as part of Tier 2 design. If avoidance is not possible, measures to minimize or reduce the impacts should be evaluated, as discussed above.

If conversions of prime farmlands are anticipated to occur, in accordance with the FPPA, NYSDOT will prepare a Farmland Conversion Impact Rating and submit this rating to the USDA Natural Resources Conservation Service (NRCS). This will also require consultation with the State NRCS FPPA contact and a review of alternative actions that do not require farmland acquisition. Avoidance measures and appropriate mitigation would be determined in consultation with the agencies.

4.19. Air Quality

By potentially altering the modal distribution of inter-city travel within New York State, the proposed action may affect ambient air quality throughout the program study area. Direct effects result from program sources, such as emissions from locomotives along the corridor, while indirect effects are a result of emissions generated by non-program sources, such as vehicles traveling to stations and reduced auto travel in the region. When combined, the net change in emissions due to a large program such as the proposed action can also impact area-wide emissions, affecting air quality in one or more areas. Since the current analysis is part of a Tier 1 EIS, detailed site-specific information (e.g. local traffic conditions at stations) is not available at this time; therefore, local (microscale) air quality analyses are limited to screening for potential local impacts from locomotive emissions (worst case of all alternatives was analyzed), and a qualitative discussion of on-road microscale impacts. The net change in area-wide (mesoscale) emissions is analyzed in this chapter for the Preferred Alternative, and evaluated for potential adverse and/or beneficial impacts on air quality. Appendix G.18 presents more detail on the methodology, detailed assessment information (including analysis for non-criteria pollutants and background on conformity requirements and determinations), and impacts assessed for other Build Alternatives.

4.19.1. Regulatory Context

Pollutants for Analysis

Emissions from motor vehicles and locomotives result from combustion of fuels—on-road vehicles are predominantly gasoline- and diesel-powered, and locomotives are almost entirely diesel-powered, other than electric locomotives.

Carbon monoxide (CO), particulate matter (PM), volatile organic compounds (VOC), and nitrogen oxides (nitric oxide, NO, and nitrogen dioxide, NO₂, collectively referred to as NO_x) are all emitted from the combustion of both gasoline and diesel. However, CO emissions are predominantly from gasoline combustion while NO_x and PM emissions are predominantly from diesel combustion. Fine PM is also formed when emissions of NO_x, sulfur oxides (SO_x, which includes sulfur dioxide (SO₂) and other sulfur oxides), ammonia, organic compounds, and other gases react or condense in the atmosphere. Ozone is formed in the atmosphere by complex photochemical processes that include NO_x and VOC. Since CO, VOC, PM, and NO_x have all been identified as pollutants of concern for public health under the Clean Air Act (CAA), referred to as “criteria pollutants” (see more below), and are emitted from both on-road and locomotive engines, they have all been included in the mesoscale analysis presented below.

Overall, the significant reduction in CO emissions from motor vehicles due to federal regulations over the past few decades have been very successful, and CO concentrations are generally not of concern in New York State, although regulations are maintained to ensure continued compliance. Although CO does not have an area-wide impact, mesoscale CO emissions were nonetheless analyzed to gauge the overall impact of the program on CO emissions.

In addition to being a precursor to the formation of ozone, NO₂ (one component of NO_x) is also a regulated pollutant. Since NO₂ is mostly formed from the transformation of NO in the atmosphere, it has mostly been of concern further downwind from large stationary point sources, and not a local concern from mobile sources. (NO_x emissions from fuel combustion consist of approximately 90 percent NO and 10 percent NO₂ at the source.) However, with the promulgation of the 2010 1-hour

average standard for NO₂, local sources such as vehicular and locomotive emissions may become of greater concern for this pollutant.

As described below, PM is regulated in two size categories: particles with an aerodynamic diameter of less than or equal to 2.5 micrometers (PM_{2.5}), and particles with an aerodynamic diameter of less than or equal to 10 micrometers (PM₁₀, which includes PM_{2.5}). PM_{2.5} has the ability to reach the lower regions of the respiratory tract, delivering with it other compounds that adsorb to the surfaces of the particles, and is also extremely persistent in the atmosphere. PM_{2.5} is mainly derived from combustion material that has volatilized and then condensed to form primary PM (often soon after the release from a source exhaust) or from precursor gases reacting in the atmosphere to form secondary PM. Diesel-powered engines are a significant source of respirable PM, most of which is PM_{2.5} and contains adsorbed organic compounds, sulfate, nitrate and metals.

Emissions of SO₂—also a criteria pollutant under the CAA—are currently associated mainly with stationary sources, and sources utilizing non-road diesel such as diesel trains, marine engines, and non-road vehicles (e.g., construction engines). On-road diesel vehicles currently contribute very little to SO₂ emissions since the sulfur content of on-road diesel fuel, which is federally regulated, is extremely low. Similarly, non-road diesel federal regulations are being phased in requiring the phase out of sulfur in diesel for all uses. Therefore, SO₂ from transportation sources in general will not be an issue of concern beginning in the near future. Similarly, lead in gasoline has been banned under the CAA, and therefore, lead is not a pollutant of concern for the program. Therefore, SO₂ and lead have not been included in this analysis. Further information on non-criteria pollutants that were analyzed (Hazardous Air Pollutants, also referred to as Mobile Source Air Toxics) are presented in Appendix G.18.

National and State Air Quality Standards

As required by the Clean Air Act, primary and secondary National Ambient Air Quality Standards (NAAQS) have been established for six major air pollutants: CO, NO₂, ozone, respirable PM (both PM_{2.5} and PM₁₀), SO₂, and lead. The primary standards represent levels that are requisite to protect the public health, allowing an adequate margin of safety. The secondary standards are intended to protect the nation's welfare, and account for air pollutant effects on soil, water, visibility, materials, vegetation, and other aspects of the environment. The NAAQS are presented in Exhibit 4-22. New York State has also adopted the NAAQS for CO, annual NO₂, and SO₂ as ambient air quality standards, but the standards are defined on a running 12-month basis rather than for calendar years only.

4.19.2. Methodology

Local (Microscale) Analysis

On a local scale, the potential effect of the program on air quality is limited to increases in locomotive emissions, and both increases and decreases in on-road emissions. Decreases in on-road emissions could have a beneficial impact on local air quality if large numbers of vehicle trips are shifted to rail, occurring along roadways where those trips would otherwise occur. Since the details of that shift are not known at this time, this potential benefit has not been analyzed; however, the regional analysis includes a more meaningful analysis of the region-wide benefits of this mode shift. Since these trips may have the potential to adversely affect air quality, this effect will be analyzed in subsequent environmental analyses. Therefore, the remainder of this section focuses on the potential local effect associated with increases in locomotive emissions.

Exhibit 4-22—National Ambient Air Quality Standards

Pollutant		Primary/ Secondary	Averaging Time	Level	Form
Carbon Monoxide (CO)		primary	8 hours	9 ppm	Not to be exceeded more than once per year
			1 hour	35 ppm	
Lead (Pb)		primary and secondary	Rolling 3- month average	0.15 µg/m ³ (1)	Not to be exceeded
Nitrogen Dioxide (NO ₂)		primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		primary and secondary	1 year	53 ppb (2)	Annual Mean
Ozone (O ₃)		primary and secondary	8 hours	0.070 ppm (3)	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particle Pollution (PM)	PM _{2.5}	primary	1 year	12.0 µg/m ³	annual mean, averaged over 3 years
		secondary	1 year	15.0 µg/m ³	annual mean, averaged over 3 years
	PM ₁₀	primary and secondary	24 hours	35 µg/m ³	98th percentile, averaged over 3 years
		primary and secondary	24 hours	150 µg/m ³	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide (SO ₂)		primary	1 hour	75 ppb (4)	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

Notes:

(1) In areas designated nonattainment for the Pb standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 µg/m³ as a calendar quarter average) also remain in effect.

(2) The level of the annual NO₂ standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the 1-hour standard level.

(3) Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) O₃ standards additionally remain in effect in some areas. Revocation of the previous (2008) O₃ standards and transitioning to the current (2015) standards will be addressed in the implementation rule for the current standards.

(4) The previous SO₂ standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2) any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated nonattainment under the previous SO₂ standards or is not meeting the requirements of a SIP call under the previous SO₂ standards (40 CFR 50.4(3)). A SIP call is an EPA action requiring a state to resubmit all or part of its State Implementation Plan to demonstrate attainment of the required NAAQS.

Source: U.S. EPA, "NAAQS Table," <https://www.epa.gov/criteria-air-pollutants/naaqs-table>, accessed May 1, 2021.

The results of the dispersion analysis are discussed in the context of background concentrations and the NAAQS. Further details on the assessment methodology are presented in Appendix G.18.

Regional (Mesoscale) Analysis

Criteria Pollutants

The regional (mesoscale) emissions analysis estimates the net change in emissions associated with the program, including the change in both on-road and locomotive emissions. The analysis does not include the vehicle miles traveled (VMT) decrease associated with trips that may be reduced but that do not use the New York State Thruway system. Since these trips would likely not increase rail trips, the analysis is somewhat conservative (i.e., shows lower reductions and higher net emissions). The VMT were then multiplied by the corresponding emission factor and summed for each non-attainment area modelled in the Tier 1 Draft EIS.

Hazardous Air Pollutants

The Clean Air Act Amendments of 1990 listed 188 Hazardous Air Pollutants (HAPs) and addressed the need to control toxic emissions from transportation. EPA's 2007 Mobile Source Air Toxics (MSAT) rule identified a subset of seven HAPs as having significant contributions from mobile sources: benzene, 1,3-butadiene, formaldehyde, acrolein, naphthalene, polycyclic organic matter, and diesel particulate matter (DPM). The Federal Highway Administration (FHWA) also considers these the priority MSATs for analysis.¹²⁸ Analysts assessed MSATs using criteria in the Interim Guidance on Air Toxic Analysis in NEPA Documents, issued February 2006 by FHWA and the September 2009 update. Based on the FHWA guidance, the proposed alternatives do not require a detailed quantitative analysis. Nonetheless, in accordance with the program scope, analysts prepared an estimate of the net change in statewide MSAT emissions, as presented in Appendix G.18.

4.19.3. Existing Conditions

Existing conditions, presented as context for the analyses, were presented in the Tier 1 Draft EIS based on existing ambient air quality information collected by NYSDEC in 2011. These pollutant concentrations along the program corridor have been updated based on data obtained from the New York State Department of Environmental Conservation Air Quality Report for 2019. Details on the data and air pollutants are included in Appendix G.18, Exhibit G-36.

NAAQS Attainment Status and State Implementation Plans

The CAA, as amended in 1990, defines non-attainment areas as geographic regions that have been designated as not meeting one or more of the NAAQS. When an area is designated as non-attainment by the U.S. EPA, the state is required to develop and implement a State Implementation Plan (SIP), which delineates how a state plans to achieve air quality that meets the NAAQS under the deadlines established by the CAA, followed by a plan for maintaining attainment status once the area is in attainment. Exhibit 4-23 summarizes the various non-attainment and maintenance areas in the program study area, and their status is reviewed in this section below.

Effective June 15, 2004, the U.S. EPA designated Nassau, Rockland, Suffolk, Westchester, and the five New York City counties (the New York-New Jersey-Long Island non-attainment area, New York portion) as moderate non-attainment for the 1997 8-hour average ozone standard. On February 8,

¹²⁸ FHWA, Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA Documents (HEPN-10), September 20, 2009.

2008, NYSDEC submitted final revisions to the SIP to the U.S. EPA to address the 1997 8-hour ozone standard.

In March 2008 the U.S. EPA strengthened the 8-hour ozone standards. U.S. EPA designated the New York portion of the New York–Northern New Jersey–Long Island, NY–NJ–CT non-attainment area (NAA) as a moderate NAA for the 2008 ozone NAAQS, effective July 20, 2012. In 2015, the U.S. EPA revised the 2008 ground-level ozone standard from 75 ppb to 70 ppb to increase protection for public health and at-risk groups.

Manhattan has been designated as a moderate non-attainment area for PM₁₀. On January 30, 2013, New York State requested that U.S. EPA approve its withdrawal of the 1995 SIP and redesignation request for the 1987 PM₁₀ NAAQS, and that U.S. EPA make a clean data finding instead, based on data monitored from 2009–2011 indicating PM₁₀ concentrations well below the 1987 NAAQS. Although not yet a redesignation to attainment status, if approved, this determination would remove further requirements for related SIP submissions.

The five New York City counties and Nassau, Suffolk, Rockland, Westchester, and Orange Counties are no longer designated as a PM_{2.5} non-attainment area. New York State submitted a redesignation request and maintenance plan to U.S. EPA in 2013. U.S. EPA had lowered the annual average primary standard to 12 µg/m³. The New York City Metropolitan Area is also no longer designated as non-attainment with the 2006 24-hour PM_{2.5} NAAQS. Based on monitoring data from 2007–2011, 24-hour average concentrations of PM_{2.5} in this area no longer exceeded the standard. New York had submitted a “Clean Data” request to the U.S. EPA. New York State submitted a redesignation request and maintenance plan to U.S. EPA in 2013. In April 2014, this redesignation as a maintenance area went into effect.

All areas in New York State are currently in attainment of the annual-average NO₂ standard. Based on data from existing monitoring stations, the U.S. EPA has designated the entire State of New York as “unclassifiable/attainment” effective February 29, 2012.

Exhibit 4-23—Non-Attainment Areas in the Study Area

Pollutant	Non-Attainment Area	Severity	Counties
Ozone (8 hour) (2015 standard)	New York–N. New Jersey–Long Island, NY–NJ–CT	Moderate	Bronx Kings Nassau New York Queens Richmond Rockland Suffolk Westchester
PM ₁₀ (1987 standard)	New York County	Moderate	New York

Source: U.S. EPA, Greenbook, “Current Nonattainment Counties for All Criteria Pollutants,”

<https://www3.epa.gov/airquality/greenbook/anc1.html>, current as of April 30, 2018, accessed May 1, 2018.

Based on the available monitoring data, all areas in New York State currently meet the new 1-hour SO₂ standard.

In 2002, the U.S. EPA redesignated New York City as in attainment for CO. Under the resulting maintenance plan, New York City is committed to implementing site-specific control measures throughout the city to reduce CO levels, should unanticipated localized growth result in elevated CO levels during the maintenance period. The Syracuse area (Onondaga County) is also a maintenance area for CO.

4.19.4. Environmental Consequences

This air quality assessment addresses and compares the long-term impacts of the Preferred Alternative, Alternative 90B, to those of the other alternatives considered, including the Base Alternative. The results of two analyses are included below. A local (microscale) screening is based on the concentration of the pollutants of interest at a specific location. Regional (mesoscale) analyses present the overall change in pollutant emissions. The potential effects of other Build Alternatives and analysis methodology for local and regional are described in more detail in Appendix G.18. Short-term impacts due to construction activities are discussed in Section 4.25.3.

Local (Microscale)

Screening Results

The results of the screening analysis, representing the effect of locomotive emissions along the track and at stations, is presented in Appendix G.18. The resulting concentrations are lower than the NAAQS for both annual-average NO₂ and PM_{2.5}—the two critical pollutants for this analysis, indicating that operations of the Preferred Alternative (Alternative 90B) would not result in a significant adverse impact with respect to these standards.

Regional (Mesoscale)

To present these emission changes in context, the emissions were compared with the emissions projected to occur in each analysis area in 2035 from the on-road sector.^{129, 130} Although the changes are small in the regional context, the net result is a reduction in all pollutants other than NO_x. The projected increase in NO_x emissions and decrease in VOC emissions represent less than 0.3 percent of emissions in each area (varies by region and alternative). Changes in particulate matter would be negligible. Overall, in all cases these changes range from very small to negligible.

The total net change in criteria pollutant emissions from Alternative 90B (the Preferred Alternative), are presented in Exhibit 4-24 and emissions from Alternatives 90A, 110, and 125 are presented in Appendix G.18. The Preferred Alternative will result in a net reduction of 61 tons per year of CO in the New York-New Jersey-Long Island non-attainment area (for 8-hour ozone) and 44 tons in the Syracuse area, with smaller reductions on VOCs (between 1.8 to 4 tons in the five cities analyzed).

¹²⁹ NYMTC/OCTC, Final Transportation/Air Quality Conformity Determination for the Orange County Portion of the NY-NJ-CT PM_{2.5} Non-Attainment Area, May 12, 2010; PDCTC, Air Quality Conformity Determination Statement for the Poughkeepsie Ozone Non-attainment Area, May 12, 2010.

¹³⁰ For the Syracuse, Albany, Rochester, and Buffalo areas, future inventories or budgets were not available. The estimate is based on the ratio of 2008 NO_x emissions in each region (or CO for Syracuse) to the emissions in the NYMA, from the EPA National Emissions Inventory.

Exhibit 4-24—Criteria Pollutant Emissions Net Reduction, 2035, Alternative 90B, Preferred Alternative (tons per year)

Analysis Area	NO _x	VOC	CO	PM ₁₀	PM _{2.5}
Albany-Schenectady-Troy, NY	-8.0	4.0	NA	NA	NA
Rochester, NY	-3.1	5.0	NA	NA	NA
Buffalo-Niagara Falls, NY	-1.2	1.8	NA	NA	NA
Poughkeepsie, NY	-2.6	1.8	NA	NA	NA
New York-N. New Jersey-Long Island, NY-NJ-CT (ozone 8-hour non-attainment area)	-1.5	2.3	61	NA	0.24
Syracuse, NY	NA	NA	44	NA	NA
New York Co, NY (PM ₁₀ non-attainment area)	NA	NA	NA	0.00	NA
Notes: NA=Not Applicable. Data presented address only pollutants relevant to each former or current non-attainment area. Negative numbers represent a net increase.					

Conformity with State Implementation Plans

The conformity requirements of the CAA and regulations promulgated thereunder (conformity requirements) limit the ability of federal agencies to assist, fund, permit, and approve projects in non-attainment areas that do not conform to the applicable SIP. When subject to this regulation, the lead agency is responsible for demonstrating conformity for its proposed action. Conformity determinations for federal actions other than those related to transportation plans, programs, and projects that are developed, funded, or approved under title 23 U.S.C. or the Federal Transit Act (49 U.S.C. 1601 et seq.) must be made according to the requirements of 40 CFR 93, Subpart B (federal general conformity regulations).

The general conformity regulations apply to those federal actions in non-attainment or maintenance areas where the action's direct and indirect emissions have the potential to emit one or more of the six criteria pollutants at rates equal to or exceeding the prescribed rates.

General conformity *De Minimis* Threshold Levels for various non-attainment areas and maintenance areas intersecting the program study area are presented in Exhibit 4-25.

Exhibit 4-25—General Conformity Threshold Levels

Non-Attainment Area and Pollutants	Tons per year
Ozone, other non-attainment areas inside an ozone transport region–	
VOC	50
NO _x	100
CO, maintenance areas	100
PM ₁₀ , Moderate non-attainment areas	100
PM _{2.5} , any non-attainment area	
Direct emissions	100
SO ₂	100
NO _x	100

Sources: 40 CFR 93.153(b)

The general conformity requirements do not apply to federal actions that:

- Do not satisfy either one of the above conditions (where the action's direct and indirect emissions have the potential to emit one or more of the six criteria pollutants at rates equal to or exceeding the threshold levels above within a non-attainment or maintenance area);
- Occur in an attainment area;
- Are related to transportation plans, programs, and projects developed, funded, or approved under Title 23 U.S.C. or the Federal Transit Act (49 U.S.C. 1601); or
- Qualify for exemptions established at 40 CFR 93.153.

The regulation assumes that a proposed federal action whose criteria pollutant emissions have already been included in the local SIP's attainment or maintenance demonstrations conforms to the SIP.

The program's effect on emissions within the relevant nonattainment areas and applicability of the conformity regulations for operational emissions have been evaluated as part of the regional (mesoscale) emissions analysis.

4.19.5. Potential Mitigation Strategies

This Tier 1 analysis focused on net regional (mesoscale) emissions and on potential increases in concentrations along rail lines. In both cases, no potential significant adverse air quality impacts were found, and therefore, no mitigation will be required. If future analyses of local on-road and locomotive emissions identify potential impacts for Alternative 90B, the Preferred Alternative, appropriate site-specific mitigation can be investigated.

4.19.6. Future Analysis

Tier 2 analysis for the Preferred Alternative, Alternative 90B, can include the potential air quality implications of local traffic to and from stations, and of locomotives and other sources operating in rail yards and other locations other than the line-haul analyzed here for the Tier 1 assessment, as appropriate. If the project is not included in the State Implementation Plan, an applicability analysis

can be performed to determine if a general conformity analysis will be performed, if required. In addition, should in line-haul operations change substantially, microscale line-haul and mesoscale emissions likely can be investigated.

4.20. Energy and Climate Change

Potential effects of global climate change on the program alternatives and potential effects of the program alternatives on energy consumption and greenhouse gas (GHG) emissions are assessed in this section. Therefore, this chapter does not identify specific contributions of the proposed program to climate impacts, but rather addresses the changes in GHG emissions associated with each of the program alternatives as compared to the Base Alternative.

4.20.1. Regulatory Context

Greenhouse Gas Policy, Regulations, Standards, and Benchmarks

The energy and GHG analysis was prepared in accordance with the *Draft Air Quality, Energy and Greenhouse Gas Emission Analysis Procedures for Plans and TIPs and Draft Energy and Greenhouse Gas Emission Analysis Procedures for Projects*, February 12, 2003, and subsequent guidance and methods provided by NYSDOT. In addition to the NYSDOT methodology, the general approach follows the New York State Department of Environmental Conservation (NYSDEC) policy document entitled *Assessing Energy Use and Greenhouse Gas Emissions in Environmental Impact Statements*, July 15, 2009 (NYSDEC policy). The Council on Environmental Quality's (CEQ) final guidance entitled *Final NEPA Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews*, August 1, 2016, was consulted as well. Greater detail regarding GHG regulations is included in Appendix G.19.

The U.S. EPA has established various voluntary programs to reduce emissions and increase energy efficiency and has recently embarked on regulatory initiatives related to GHG emissions. At the Federal level, the U.S.DOT corporate average fuel economy (CAFE) standards for light duty vehicles was originally set in 2009 but has been updated to include GHG emissions with the intent to reduce vehicular GHG emissions over time.

In January 2021, the new Presidential Administration signed a series of executive orders to promote climate action. One Executive Order proposes the U.S. EPA create a Federal Implementation Plan to control ozone for several states including New York.¹³¹ Another Executive Order contained several climate-related goals to build resilience to mitigate the impacts of climate change for current future intensities. At the state level, in July 2019, New York State passed the Climate Leadership and Community Protection Act (Climate Act)¹³² to adopt measures towards two main goals, to achieve 100 percent zero-emission electricity by 2040 and reduce emissions to at least 85 percent below 1990 levels by 2050.

¹³¹ WhiteHouse.Gov. Presidential Actions. 2021, January 20. *Executive Order on Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis*. <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/20/executive-order-protecting-public-health-and-environment-and-restoring-science-to-tackle-climate-crisis/>

¹³² New York State Senate. 2019. *Senate Bill S6599*. <https://www.nysenate.gov/legislation/bills/2019/s6599>.

Pollutants of Concern

This analysis focuses mostly on CO₂, N₂O, and methane resulting from combustion sources such as locomotives and vehicles, as well as sources associated with production of construction materials. Greater detail on pollutants of concern can be found in Appendix G.19.

GHGs are gaseous constituents that absorb and emit infrared radiation (heat) which causes the general warming of the Earth's atmosphere, or the "greenhouse effect." Carbon dioxide (CO₂) is the primary pollutant of concern from anthropogenic sources. removal processes and a relatively high impact on global climate change as compared to an equal quantity of CO₂. There are no significant direct or indirect sources of HFCs, PFCs, or SF₆ associated with the proposed program.

To present a complete inventory of all GHGs, component emissions are added together and presented as CO₂ equivalent (CO₂e)—a unit representing the quantity of each GHG weighted by its effectiveness using CO₂ as a reference. This is achieved by multiplying the quantity of each GHG emitted by a factor called global warming potential (GWP). The GWPs for the main GHGs discussed here are presented in Exhibit 4-26.

Exhibit 4-26—Global Warming Potential (GWP) for Major GHGs

Greenhouse Gas	100-year Horizon GWP
Carbon Dioxide (CO ₂)	1
Methane (CH ₄)	25
Nitrous Oxide (N ₂ O)	298
Hydrofluorocarbons (HFCs)	124 to 14,800
Perfluorocarbons (PFCs)	7,390 to 12,200
Sulfur Hexafluoride (SF ₆)	22,800

Source: IPCC, Climate Change 2007—The Physical Science Basis, Contribution of Working Group I to the Fourth Assessment Report, Table 2-14, 2007.

Currently, there are no standards or regulations applicable to GHG emission levels or impacts from actions subject to environmental review under NEPA or SEQ. Accordingly, the potential effects of the proposed program have been evaluated in the context of their consistency with the objectives stated in federal and state policies. Appendix G.19 provides additional background on international, federal, and state regulatory framework, policies, and guidance applicable to the GHG emissions assessment.

4.20.2. Methodology

Operational emissions are presented for a single year, 2035, which would be representative of a reasonable worst-case scenario. Emissions related to construction activity and embodied materials

would occur over a period prior to and during construction, and are presented both as total emissions and annualized over an estimated 80-year lifetime of the proposed program.

The GHG emissions analysis includes the following sources:

- Locomotives fuel consumption,
- On-road fuel consumption,
- Electricity use (rail only),
- Fuel use for construction material delivery, and
- Building materials production.

Some additional emissions associated with stations and other operations would occur, but are not included at this time since detailed data is not yet available.

Annual emissions that would occur as a result of program operation were conservatively calculated based on the 2035 ridership scenario, representing the maximum emissions associated with the proposed program at full operation. Appendix G.19 describes the methodology used to calculate the GHG emissions from each included source.

4.20.3. Existing Conditions

Consistent with the NYSDOT guidance, GHG analyses are not prepared for existing conditions. In the existing condition, passenger and freight railway operations and maintenance use fuel and occasionally materials, resulting in some energy use and GHG emissions and offsetting energy use and GHG emissions from on-road operations.

4.20.4. Environmental Consequences

Comparison of Alternatives

The long-term impact of the Build Alternatives on energy and greenhouse gas emissions is ultimately always positive, as the on-road benefits persist year after year and eventually offset the initial construction impacts (see Exhibit 4-27 and Appendix G.19). The reduction in energy use and GHG emissions would be 20 percent greater with the Preferred Alternative (Alternative 90B) than Alternative 90A and roughly equivalent to that for Alternative 110 (2% less). For greater detail and comparison of alternatives, see Appendix G.19. The short-term impacts to energy and climate are discussed in Section 4.25.3.

Compared to the Preferred Alternative, Alternative 125 has the greatest potential for decrease in annual energy use (44%) and GHG emissions (by 30%) (see Appendix G.19). However, Alternative 125 is likely to require the greatest quantity of energy and materials for construction. Alternative 90A has the smallest annual benefit but would also require the shortest period to offset the emissions, 20 years, with Alternatives 110 and 125 demonstrating net positive energy and emissions impacts still further into the future, 78 to 92 years and 303 to 317 years, respectively.

Exhibit 4-27—Net Energy Use and GHG Emissions as Compared with Base Alternative, Alternative 90B, Preferred Alternative

	Energy Use (million Btu)	GHG Emissions (metric tons CO ₂ e)
Rail Operation (per year)	357,886	26,280
Rail Maintenance (per year)	47,827	3,501
On-Road Maintenance (per year)	-25,241	-1,848
On-Road Operation (per year)	-771,699	-61,121
<i>Net (per year)</i>	-391,227	-33,188
Construction (total)	21,104,757	1,544,912
Offset Period (years)	54	47
Notes: Negative numbers indicate reduction as compared to Base Alternative. Includes well-to-pump emissions for both on-road and rail components.		

Alternative 90B (Preferred Alternative)

The long-term impact of the Preferred Alternative (Alternative 90B) on energy and greenhouse gas emissions is ultimately always positive, as the on-road benefits persist year after year and eventually offset the initial construction impacts starting approximately 47 to 50 years after (see Exhibit 4-27). The net annual operational benefits for the Preferred Alternative would be roughly equivalent to eliminating the emissions associated with the energy and electricity consumption of 2,500 to 4,200 average U.S. single family homes every year.¹³³

4.20.5. Potential Mitigation Strategies**Greenhouse Gas Emissions**

Since global climate change is caused cumulatively by world-wide activity, the impact of a specific program on climate change cannot be determined. Therefore, the approach applied here for evaluating the potential impact of the program is to identify the program's potential GHG emissions, and to evaluate whether it incorporates cost-effective energy efficiency and renewable energy measures into its design, construction, and operation to the maximum extent practicable, consistent with social, economic and other essential considerations. By doing so, the program would demonstrate consistency with state and local policies.

Since this is a Tier 1 EIS, the details of design, construction, and operation are not yet fully available. Therefore, this section identifies potential measures for inclusion, which would reduce the program's energy and GHG footprint if implemented. These measures will be further investigated, and if found to be practicable, incorporated in the program's design and operation.

¹³³ Based on U.S. EPA's GHG Equivalencies Calculator, <<http://www.epa.gov/cleanenergy/energy-resources/calculator.html>>.

Operational:

- **Shift Locomotives to Biodiesel Fuel**—Options to use biodiesel for the locomotives can be investigated, including blends of B20 and B100 (20 percent biodiesel with 80 percent standard diesel, or pure biodiesel). B20 can be used with current technology while B100 may require some adjustments or new engines. The use of B20 would reduce GHG emissions by 10 percent, and B100 would reduce GHG emissions by 70 percent, reducing operational emissions by 2,300 to 3,000 metric tons CO₂e annually (varies by alternative).
- **Electrification**—The benefits of shifting rail operations along the entire line to electricity have not been quantified at this time. Benefits would increase over the years as the New York grid shifts to increasingly higher fractions of renewable power sources (the New York grid currently includes relatively large fractions of nuclear and hydro power, which result in very little GHG emissions).
- **Sustainable Station Design and Construction**—Although station energy use was not included in this analysis, new stations can be designed in accordance with the requirement of Executive Order 111, “Green and Clean” State Buildings and Vehicles Guidelines (NYSERDA, 2004), outperforming state energy code by 20 percent.

Construction:

- **Use of Local, Renewable, Recycled Materials**—The extraction, production, transport, and disposal of construction materials would account for 75 percent of the construction emissions. Although precise details are not known at this time, the reduction in these emissions can be substantial if local, renewable, and recycled materials are used. The largest contributors are cement and steel. If emissions associated with material can be cut in half (existing strategies demonstrate that this is possible), the emissions payback period could be reduced by nearly 40 percent, resulting in payback periods of 12, 29, 49, 190 years for Alternative 90A, 90B (the Preferred Alternative), 110, and 125, respectively.
- **Biodiesel for Construction Engines**—Biodiesel blends can be used in construction engines as an alternative to conventional fuel.
- **Replanting Trees**—Although not quantified here, any trees that need to be removed for construction could be replaced with a larger number of trees, replacing the trees in kind or more on a tree-mass basis.

Potential Impacts of Climate Change

Examples of mitigation measures that have been employed in other areas to respond to potential impacts of sea-level rise include installing flood barriers, raising mechanical and electrical equipment, waterproofing, installation of pumps, and locating or relocating facilities such as rail yards outside of low-lying floodprone areas.

Since the rail line along the eastern shore of the Hudson would need to be moved or elevated in the future to accommodate increased flooding due to sea level rise, NYSDOT will coordinate with state and federal agencies regarding potential measures for adapting to future climate conditions in order to avoid repeated construction work.

Mitigation measures instituted by Metro-North along the Hudson Line in response to flooding during recent storm events include elevating power supply components, raising critical substation equipment at key locations, and making power equipment watertight where possible. Mitigation

being investigated by Metro-North will also explore ways to make signal and communication equipment watertight and elevate signal boxes and other on-ground signal equipment to minimize susceptibility to flooding. Future installation of water level monitoring and alarm devices at critical locations like power substations, yards, and stations will provide Metro-North management with the information to facilitate power shutoffs and avoid equipment damage and risks to customer and employee safety. MTA is also planning to purchase a rail vacuum machine, which are rail-mounted machines with digging arms and vacuum pumps, to reduce track flooding.

Along the Mohawk River portion of the Erie Canal, which closely parallels portions of the Empire Corridor West, certain components of the water control structures along the historic canal system cannot be removed prior to a major flood event. The New York State Canal Corporation is in the process of implementing a FEMA mitigation project to allow the existing movable dams to be raised out of the water in anticipation of a major flood event to remove the hydraulic obstruction that the dams create.

Section 4.9.5, Potential Mitigation Strategies for Floodplains along the project corridor also details other environmental strategies to reduce potential flooding impacts.

4.20.6. Future Analysis

In the Tier 2 analysis, per NYSDEC as part of New York State's recent Climate Leadership and Community Protection Act, "Value of Carbon Guidance" (issued December 30, 2020), detailed GHG reduction measures can be evaluated through a damages-based valuation approach. The guidance document is designed to provide accessibility and practicability to state agencies and authorities by regularly incorporating greenhouse gas emissions and climate change in decision-making contexts.

The guidance document may be reviewed and incorporated in the program for the Preferred Alternative, Alternative 90B, as appropriate. The benefits of measures will be quantified if practicable. If substantial changes in design occur, the overall GHG emissions will be reevaluated as well, and further refined if possible.

4.21. Noise and Vibration

The proposed program alternatives, including the Preferred Alternative (Alternative 90B), could alter rail operations (i.e. speed, frequency, alignment) in the corridor, which would affect noise and vibration levels at sensitive locations in proximity to the rail right-of-way. This chapter assesses the potential for adverse impacts due to changes in rail operations along the Empire Corridor between New York City and Niagara Falls.

4.21.1. Regulatory Context

Noise

A noise assessment was conducted using the methodology set forth in both the FRA guideline document, *High Speed Ground Transportation Noise and Vibration Impact Assessment*¹³⁴ for the high-speed rail noise/vibration analyses and the Federal Transit Administration's (FTA) guidance manual,

¹³⁴ U.S. Department of Transportation, *High Speed Ground Transportation Noise and Vibration Impact Assessment*, Federal Railroad Administration, Office of Railroad Development, Washington, D.C., September 1998.

*Transit Noise and Vibration Impact Assessment*¹³⁵ for the Amtrak, CSXT, and the Metro-North noise/vibration analyses.

Both FRA and FTA guidance manuals define noise criteria based on the specific type of land use that would be affected, with explicit operational noise impact criteria for three land use categories. These impact criteria are based on either peak 1-hour equivalent noise level ($L_{eq(1h)}$) or 24-hour day-night equivalent noise level (L_{dn}) values. The hourly equivalent sound level is the level of a steady sound that has the equivalent sound energy as does a time-varying sound over a peak 1-hour period. A day-night equivalent sound level is a 24-hour average adjusted for average-day sound source operations. In the case of rail noise, a single operation is equivalent to a single train vehicle pass-by. The adjustment includes a 10-decibel penalty for vehicle pass-bys occurring between 10 p.m. and 7 a.m.

Exhibit 4-28 describes the land use categories defined in the FRA and FTA reports, and provides noise metrics used for determining operational noise impacts. Land uses that are noise-sensitive, but where people do not sleep, are described in Exhibit 4-28, Categories 1 and 3. These require examination using the 1-hour L_{eq} descriptor for the noisiest peak hour. Category 2, which includes residences, hospitals, and other locations where nighttime sensitivity to noise is very important, requires examination using the 24-hour L_{dn} descriptor.

Exhibit 4-29 expresses the criteria in terms of the increase in total or cumulative noise that can occur in the overall noise environment before impact occurs. The impact criteria are keyed to the noise level generated by the program (called “program noise exposure”) in locations of varying existing noise levels. Two types of impacts—moderate and severe—are defined for each land use category, depending on existing noise levels. Thus, where existing noise levels are 40 dBA, as in Land Use Categories 1 and 2, the respective L_{eq} and L_{dn} noise exposure from the program would create moderate impacts if they were above approximately 50 dBA, and would create severe impacts if they were above approximately 55 dBA. For Category 3, a project noise exposure level above approximately 55 dBA would be considered a moderate impact, and above approximately 60 dBA would be considered a severe impact. A noise level change that a significant percentage of people would find annoying is described as severe. A change in noise level that is noticeable to most people but would not necessarily result in strong adverse reactions from the community is described as moderate.

Exhibit 4-28—FRA's and FTA's Land Use Category and Metrics for Train Noise Impact Criteria

Land Use Category	Noise Metric (dBA)	Description of Land Use Category
1	Outdoor $L_{eq(h)}$ *	Quiet is an essential element in the intended purpose. Such land uses as outdoor amphitheaters and concert pavilions, as well as National Historic Landmarks with significant outdoor use, recording studios, and concert halls.
2	Outdoor L_{dn}	Residences and buildings where people normally sleep. This category includes homes, hospitals, and hotels, where a nighttime sensitivity to noise is assumed to be of utmost importance.
3	Outdoor $L_{eq(h)}$ *	Institutional land uses with primarily daytime and evening use. This category includes schools, libraries, and churches, cemeteries, monuments, museums, campgrounds, recreational facilities, and certain historical sites and parks.
Note: * L_{eq} for the noisiest hour of transit-related activity during hours of noise sensitivity.		

¹³⁵ U.S. Department of Transportation, *Transit Noise and Vibration Impact Assessment*, FTA Report FTA-VA-90-1003-06, Federal Transit Administration, Washington, D.C., May 2006.

Exhibit 4-29—Ground-Borne Vibration (GBV) and Ground-Borne Noise (GBN) Impact Criteria

Land Use Category	GBV Impact Levels (VdB re 1 micro-inch/sec)			GBN Impact Levels (dB re 20 micro Pascals)		
	Frequent Events ¹	Occasional Events ²	Infrequent Events ³	Frequent Events ¹	Occasional Events ²	Infrequent Events ³
Category 1: Buildings where vibration would interfere with interior operations	65 VdB ⁴	65 VdB ⁴	65 VdB ⁴	N/A ⁴	N/A ⁴	N/A ⁴
Category 2: Residences and buildings where people normally sleep	72 VdB	75 VdB	80 VdB	35 dBA	38 dBA	43 dBA
Category 3: Institutional land uses with primarily daytime use	75 VdB	78 VdB	83 VdB	40 dBA	43 dBA	48 dBA
Notes: 1 "Frequent Events" is defined as more than 70 vibration events of the same source per day. Most rapid transit projects fall into this category. 2 "Occasional Events" is defined as between 30 and 70 vibration events of the same source per day. Most commuter trunk lines have this many operations. 3 "Infrequent Events" is defined as fewer than 30 vibration events of the same kind per day. This category includes most commuter rail systems. 4 This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Ensuring lower vibration levels in a building often requires special design of the HVAC systems and stiffened floors.						

Vibration

The FRA/FTA criteria for environmental impact from ground-borne vibration and noise are based on the maximum levels for a single event. Exhibit 4-29 includes the impact criteria as defined in the FRA/FTA guidance manual. The criteria for acceptable ground-borne vibration are expressed in terms of root mean square [rms] velocity levels in decibels and the criteria for acceptable ground-borne noise are expressed in terms of A-weighted sound level.

The limits are specified for the three land use categories defined below:

- **Vibration Category 1: High Sensitivity**—This category includes buildings where it is essential that ambient vibration be kept very low for the operations within the building, which may be well below levels associated with human annoyance. Typical land uses are vibration-sensitive research and manufacturing, hospitals, and university research operations.
- **Vibration Category 2: Residential**—This category covers all residential land uses and any buildings where people sleep, such as hotels and hospitals. No differentiation is made between different types of residential areas. This is primarily because ground-borne vibration and noise are experienced indoors and building occupants have practically no means to reduce their exposure. Even in a noisy urban area, the bedrooms often will be quiet in buildings that have effective noise insulation and tightly closed windows. Hence, an occupant of a bedroom in a noisy urban area is likely to be just as sensitive to ground-borne noise and vibration as someone in a quiet suburban area.
- **Vibration Category 3: Institutional**—This category includes schools, churches, other institutions, and quiet offices that do not have vibration-sensitive equipment, but still have the potential for activity interference.

4.21.2. Methodology

Noise

The analysis of airborne noise was performed using procedures set forth in the FRA and FTA guidance manuals. Following the methodologies set forth in this document, airborne noise impacts should be analyzed using a three-step process that consists of a screening procedure, a general noise assessment, and a detailed noise analysis.

- **Step 1—NOISE SCREENING:** The methodology begins with a noise screening to determine whether any noise-sensitive receptors are within a distance where an impact is likely to occur. According to the FTA screening methodology, potential impacts may occur if noise receptors are within 750 feet from the track centerline for unobstructed sensitive receptors, or 375 feet from the track centerline for obstructed sensitive receptors. According to the FRA screening methodology, potential impacts may occur if noise receptors are within 900 feet from the track centerline for quiet suburban land uses, or 450 feet from the track centerline for urban land uses. Based upon the screening procedure result, there were noise sensitive receptors within these distances along the corridor, and therefore, a General Noise Assessment was performed to determine the potential for adverse effects at specific distances from the right-of-way.
- **Step 2—GENERAL NOISE ASSESSMENT:** The general noise assessment methodology consists of determining a project noise exposure at 50 feet from the centerline of track, and comparing the calculated levels with the criteria based on land use categories. The calculations to predict the noise levels from the increased train speed and change in the alignment along the rail line branch take into account: the type of trains and type of locomotives, number of trains and number of locomotives on each train, the speed of the trains, characteristics of the track, and the time of day. For the Amtrak, CSXT, and the Metro-North assessment, the general noise assessment methodology is presented in Chapter 5 of the FTA Manual.
- **Step 3—DETAILED NOISE ANALYSIS:** A detailed noise assessment is beyond the scope and detail that will be provided in the Tier 1 assessment and provides the highest degree of accuracy using site-specific information. The detailed noise analysis utilizes additional information not included in the General Noise Assessment, including topographic information. Noise impacts identified in the analysis often require in-depth evaluation of mitigation measures. As discussed above, the detailed noise assessment would be conducted in any Tier 2 assessment or project-level environmental document if the results of the General Noise Assessment indicate that the Preferred Alternative would potentially result in an adverse impact.

Vibration

The vibration analysis for the program alternatives was performed using the procedures described in the FRA/FTA guidance manuals. To examine potential impacts during operation, the guidance documents (similar to the approach for assessing noise) lay out a three-step approach for the analysis of vibration and ground-borne noise: a screening procedure, a general assessment methodology, and a detailed analysis methodology.

The screening procedure is used to determine whether any noise-sensitive receptors are within distances where impacts are likely to occur; the general assessment methodology is used to determine locations or rail segments where there is the potential for impacts; and the detailed analysis methodology is used to predict impacts and evaluate the effectiveness of mitigation with greater precision than can be achieved

with the general assessment, which would typically be conducted for a project-level or Tier 2 EIS.

4.21.3. Existing Conditions

The program corridor of the alignment currently experiences Amtrak service and CSXT freight service throughout much of the program corridor, and Metro-North Railroad (MNR) commuter rail service operates between New York City and Poughkeepsie. The corridor was divided into the following segments: New York City to Croton; Croton to Poughkeepsie; Poughkeepsie to Albany; Albany to Schenectady; Schenectady to Hoffmans; Hoffmans to Utica; Utica to Syracuse; Syracuse to Rochester; Rochester to Buffalo; and Buffalo to Niagara Falls. Based on information provided by the land use assessment (see Section 4.2, “Land Use”), and aerial photographs, various noise sensitive land uses (i.e., residential, commercial, industrial, institution, open space, etc.) are located in the vicinity of the corridor. Train movement on each segment is described in Exhibit 4-30.

The existing line operators along this segment between New York City (Grand Central Terminal in Manhattan) and Croton Harmon include Amtrak, CSXT, and MNR, with approximately 169 trains operating per day and 42 trains per night. For the purposes of the noise and vibration impact assessment, the maximum speed is 75 mph.

The existing line operators along this segment between Croton and Poughkeepsie include Amtrak, CSXT, and MNR, with approximately 239 trains operating per day and 70 trains per night. For the purposes of the noise and vibration impact assessment, the maximum speed is 90 mph.

The existing line operators along this segment between Poughkeepsie and Albany include Amtrak and CSXT, with approximately 24 trains operating per day and 8 trains per night. For the purposes of the noise and vibration impact assessment, the maximum speed between Poughkeepsie and Hoffmans is 110 mph. The existing line operators along this segment between Albany and Hoffmans include Amtrak and CSXT, with approximately 12 to 14 trains operating per day and no train sources at night.

The existing line operators along this segment between Hoffmans and Utica include Amtrak and CSXT, with approximately 35 trains operating per day and 26 trains per night. For the purposes of the noise and vibration impact assessment, the maximum speed is 79 mph.

The existing line operators along this segment between Utica and to Syracuse and Rochester include Amtrak and CSXT, with approximately 43 to 44 trains operating per day and 30 to 33 trains per night. The existing line operators along this segment between Rochester and Buffalo include Amtrak and CSXT, with approximately 51 trains operating per day and 48 trains per night. For the purposes of the noise and vibration impact assessment, the maximum speed between Utica and Buffalo is 79 mph.

The existing line operators along this segment between Buffalo and Niagara Falls include Amtrak and CSXT, with approximately 10 trains operating per day and 16 trains per night. For the purposes of the noise and vibration impact assessment, the maximum speed is 60 mph.

For sensitive receptors located between 30 and 120 feet from the track centerline, the predicted existing day-night equivalent noise level (Ldn) would range from 65 dBA to 70 dBA Ldn for the overall program corridor. Exhibit 4-30 summarizes the existing train movements and predicted existing noise levels on the entire corridor.

4.21.4. Environmental Consequences

Noise

Using the methodology described previously, the noise analysis for the Tier I EIS consists of a noise screening procedure and a general noise assessment to determine potential impacts in the vicinity of the corridor. Potential noise impacts with the proposed Empire Corridor program were evaluated along the entire track segments. Based upon the screening results, there are sensitive receptors within 750 feet from the track centerline for unobstructed sensitive receptors and 375 feet from the track centerline for obstructed sensitive receptors. Because the screening identified sensitive receptors, a general noise assessment was performed using procedures set forth in the FRA and the FTA guidance manuals, as previously described.

The long-term noise impacts from Empire Corridor train operations are limited to a degree by the relatively small number of additional daily trains proposed compared to combined train trips from freight and commuter rail and other sources, as shown in the table below. Short-term impacts due to construction activities are discussed in Section 4.25.3.

Exhibit 4-30—Existing Empire Corridor Train Movements and Noise Levels

Segment Number	Segment Description	Operator	Number of Trains			Number of Cars per Train	Number of Locomotives per Train	Max Speed (mph)	Existing Noise, Ldn*
			Peak Hour	10pm-7am	7am-10pm				
1	New York City to Croton	Amtrak	3	24	2	5	1	75	65-70
		CSXT	0	2	4	60	3	40	
		MNR-Electric	12	92	22	8	0	75	
		MNR-diesel	7	51	14	6	1	75	
2	Croton to Poughkeepsie	Amtrak	1	23	3	5	1	90	65-70
		CSXT	0	2	4	60	3	50	
		MNR-diesel	8	45	21	6	1	90	
3	Poughkeepsie to Albany	Amtrak	3	22	4	5	1	110	65-70
		CSXT	1	2	4	60	3	50	
4	Albany to Schenectady	Amtrak	2	12	0	6	1	110	65-70
		CSXT	1	2	0	20	1	50	
5	Schenectady to Hoffmans	Amtrak	2	8	0	6	1	100	65-70
		CSXT	0	4	0	30	2	50	
6	Hoffmans to Utica	Amtrak	1	8	0	6	1	79	65-70
		CSXT	10	27	26	80	3	60	
7	Utica to Syracuse	Amtrak	1	8	0	6	1	79	65-70
		CSXT	12	36	30	80	3	60	
8	Syracuse to Rochester	Amtrak	2	6	2	6	1	79	65-70
		CSXT	14	37	31	80	3	60	
9	Rochester to Buffalo	Amtrak	1	6	2	6	1	79	65-70
		CSXT	21	45	46	80	3	60	
10	Buffalo to Niagara Falls	Amtrak	1	3	3	6	1	60	65-70
		CSXT	5	7	13	80	3	40	
Note: The information on existing train movements in this table is based on data from LTK Engineering Services on February 7, 2012.									
* Estimated existing noise levels (L _{dn}) were predicted based on Table 5-7 of the FTA Manual.									

Train Input

For the purposes of understanding noise sources along the corridor, both existing train data and proposed trains operating under program alternatives (i.e., Base, 90A, 90B, 110, and 125) were used as train input data for noise calculations. Exhibit 4-31 lists the existing and alternatives train movements on the entire corridor.

Exhibit 4-31—Existing and Alternative Train Movements

Segment Number	Segment Description	Operator	Number of Trains						Max Speed (mph)
			Existing	Base	90A	90B	110	125	
1	New York City to Croton	Amtrak	26	26	34	34	34	48	75
		CP	0	6	6	6	6	6	40
		CSX	6	13	13	13	13	13	40
		MNR-Electric	114	102	102	102	102	102	75
		MNR-Diesel	65	75	75	75	75	75	90
2	Croton to Poughkeepsie	Amtrak	26	26	34	34	34	48	90
		CP	0	6	6	6	6	6	50
		CSX	6	13	13	13	13	13	50
		MNR-Diesel	66	76	76	76	76	76	90
3	Poughkeepsie to Albany	Amtrak	26	26	34	34	34	48	110
		CP	0	9	9	9	9	9	50
		CSX	6	10	10	10	10	10	50
4	Albany to Schenectady	Amtrak	12	12	14	14	14	12	110
		CP	0	6	6	6	6	6	50
		CSX	2	4	4	4	4	4	50
5	Schenectady to Hoffmans	Amtrak	8	8	14	14	14	8	110
		CSX	4	2	2	2	2	2	50
6	Hoffmans to Utica	Amtrak	8	8	14	14	14	8	110
		CSX	53	55	55	55	55	55	60
7	Utica to Syracuse	Amtrak	8	8	14	14	14	8	110
		CSX	66	70	70	70	70	70	60
8	Syracuse-Rochester	Amtrak	8	8	14	14	14	8	90
		CSX	68	75	75	75	75	75	60
9	Rochester-Buffalo	Amtrak	8	8	14	14	14	8	90
		CSX	91	86	86	86	86	86	60
10	Buffalo-Niagara Falls	Amtrak	6	6	12	12	12	12	60
		CSX	20	37	37	37	37	37	40
11*	Albany-Syracuse	HST	0	0	0	0	0	30	125
12*	Syracuse-Rochester	HST	0	0	0	0	0	30	125
13*	Rochester-Buffalo	HST	0	0	0	0	0	30	125

Note: The information on existing train movements in this table is based on data from LTK Engineering Services on February 7, 2012

* A two-track grade-separated corridor dedicated to high speed passenger service approximately 280 miles from Albany/Rensselaer station to Buffalo Exchange Street station.

HST=high-speed train

Comparison of Alternatives

The general noise assessment concludes that the potential for noise impacts will occur from New York City through Schenectady (from Segment 1 through Segment 4), Syracuse to Rochester (Segment 8), and Buffalo to Niagara Falls (Segment 10) at sensitive receptors at a distance of 50 feet from the track centerline (Exhibit 4-32). However, this noise impact also reflects contributions from existing and future train traffic from other sources. Over most of these segments, Amtrak (existing and proposed) train traffic does not comprise the majority of the train trips. Along Empire Corridor South (from New York City to Poughkeepsie), Metro-North commuter rail predominates, and along Empire Corridor West, west of Hoffmans, CSXT freight traffic comprises the bulk of the train trips, as shown in Exhibit 4-31.

The methodology for impact assessment is based on the change in noise levels from existing to future conditions, and the Base Alternative reflects the adverse effects of currently known future changes in rail use, including future projected increases in freight traffic and Metro-North commuter rail traffic.

Over most of the project segments, the impacts of the other Build Alternatives (Alternatives 90A and 110) would be similar to that of the Preferred Alternative. Alternative 125 would involve the greatest noise impacts for a new two-track corridor dedicated to high speed passenger service approximately 280 miles from Albany/Rensselaer station to Buffalo Exchange Street station.

However, with Alternative 125, no increase from the Base (Future No Action) Alternative is estimated to occur along the existing Empire Corridor, along which existing (regional) service will be maintained, with the exception of a projected 1 dBA increase along the segment between New York City and Croton. Over the existing Empire Corridor that would be bypassed by Alternative 125, the segments between Hoffmans to Utica (Segment 6), Utica to Syracuse (Segment 7), and Syracuse to Rochester (Segment 8), noise would be minimally lower by 1 to 2 dBA.

Exhibit 4-33 and Exhibit 4-34 show the projected noise levels along the new Alternative 125 corridor. Exhibit 4-33 shows the results of the general noise assessment for the Alternative 125 new at-grade segment. The potential for noise impacts along the new corridor would occur from Albany to Buffalo (Segment 11 through Segment 13), where existing noise levels are fairly low. Exhibit 4-34 shows the results of the general noise assessment for the new elevated segments collocated with the Empire Corridor that are currently impacted by noise, and the potential for noise impacts would also occur for four new elevated segments (i.e., Albany, Syracuse, Rochester, and Buffalo).

Alternative 90B (Preferred Alternative)

Future noise levels with the Preferred Alternative, Alternative 90B will not increase noise from the Base Alternative (Future No Action) Alternative between New York City and Schenectady, and the increase in projected noise level over the Base Alternative between Hoffmans and Rochester would be imperceptible (0 to 2 dBA). Increases of less than 3 dBA are considered to be imperceptible. The proposed program will add between 6 and 10 daily passenger trains on routes that currently experience noise from nearly 200 daily commuter trains operated by Metro-North along the Hudson Line (along Empire Corridor South), and nearly 100 daily freight trains operated by CSXT (along Empire Corridor West).

Warning Horn Noise

Potential noise impacts due to the corridor rail-road crossing with horns were evaluated along the entire corridor track segments that would be affected by the proposed new service. According to the FTA screening methodology, potential impacts may occur if noise receptors are within 1,600 feet and 1,200 feet from the right-of-way for obstructed conditions and unobstructed conditions, respectively. Based upon the screening procedure results, there are noise receptors within these distances along the corridor, and therefore, a General Noise Assessment may be necessary as part of any Tier 2 study of the Preferred Alternative (Alternative 90B) components, to determine the potential for adverse effects at specific distances from the right-of-way.

Exhibit 4-32—General Noise Assessment Results at 50 feet for Program Alternatives

Segment Number	Segment	Existing Noise, Ldn (dBA)	Alternatives Noise, Ldn (dBA)					Program Ldn(dBA) Criteria		Impact
			Base	90A	90B	110	125	Impact	Severe Impact	
1	New York City to Croton	70	73	73	73	73	74	64	69	Severe
2	Croton to Poughkeepsie	70	74	74	74	74	74	64	69	Severe
3	Poughkeepsie to Albany	70	73	73	73	73	73	64	69	Severe
4	Albany to Schenectady	70	71	71	71	71	71	64	69	Severe
5	Schenectady to Hoffmans	70	NC*	58	57	58	NC*	64	69	None
6	Hoffmans to Utica	70	61	63	63	63	61	64	69	None
7	Utica to Syracuse	70	61	63	63	63	61	64	69	None
8	Syracuse to Rochester	70	64	65	65	65	64	64	69	Moderate
9	Rochester to Buffalo	70	NC*	61	61	62	NC*	64	69	None
10	Buffalo to Niagara Falls	70	72	72	72	72	72	64	69	Severe

Note: Estimated existing noise levels (L_{dn}) were predicted based on Table 5-7 of the FTA Manual.
 * NC: Program noise level remain "No Change" because of no increment on train movements from existing to future conditions.

Exhibit 4-33—General Noise Assessment Results at 50 feet for Alternative 125 New at-grade Segment

Segment Number	Segment Description	Existing Noise, Ldn	Program Noise, Ldn	Program Ldn Criteria		Impact
				Impact	Severe Impact	
11	Albany to Syracuse	45	64	52	59	Severe
12	Syracuse to Rochester	45	64	52	59	Severe
13	Rochester to Buffalo	45	66	52	59	Severe

Note: Estimated existing noise levels (L_{dn}) were predicted based on Table 4-5 of the FRA Manual.

Exhibit 4-34—General Noise Assessment Results at 50 feet for Alternative 125 New Elevated Segment

Segment Number	Segment Description	Existing Noise, Ldn	Program Noise, Ldn	Program Ldn Criteria		Impact
				Impact	Severe Impact	
11	Albany	70	73	64	69	Severe
12	Syracuse	70	68	64	69	Moderate
13	Rochester	70	69	64	69	Severe
14	Buffalo	70	73	64	69	Severe
Note: Estimated existing noise levels (L_{dn}) were predicted based on Table 4-5 of the FRA Manual.						

Vibration

Potential vibration impacts were evaluated along the entire corridor track segments that would be affected by the proposed new service. Potential impacts may occur if vibration receptors are within 220 and 160 feet from the right-of-way for residential uses and institutional uses, respectively. However, as discussed under the noise impacts section, the Amtrak trains do not comprise the majority of train traffic along Empire Corridor South where Metro-North operates frequent commuter rail service, and Empire Corridor West where traffic predominantly consists of CSXT freight trains. Therefore, due to the relatively small increase in total trains operating as a result of the Empire Corridor program, long-term vibration impacts may be limited or minimal. Based upon the screening procedure results, there are vibration receptors within these distances along the corridor segments, and therefore, a General Vibration Assessment may be necessary in any Tier 2 assessment prepared for the Preferred Alternative, Alternative 90B, to determine the potential for adverse effects at specific distances from the new corridor segments. Short-term impacts due to construction activities are discussed in Section 4.25.3.

4.21.5. Potential Mitigation Strategies**Noise**

The general noise assessment shows that the combination of existing and projected trains from freight, commuter rail, and the proposed program would have the potential for moderate noise impacts on the segment of Syracuse to Rochester, and severe noise impacts on the segments of New York City to Croton, Croton to Poughkeepsie, Poughkeepsie to Albany, Albany to Schenectady, Buffalo to Niagara Falls, Albany to Syracuse, Syracuse to Rochester, and Rochester to Buffalo.

For Tier 2 studies for the Preferred Alternative, Alternative 90B, if required, more comprehensive analyses can provide prediction of impacts with a greater degree of precision and the assessment of the effectiveness of mitigation, similar to the general assessment results in the prediction of impacts. More detailed preliminary engineering design and operational data will be available and can be incorporated into the impact analysis. Data used for the detail noise analysis is more accurate, detailed and specific than the data used for the general noise assessment. These mitigation options would typically fall into three categories: noise source mitigation measures; path control measures; and receptor control measures. Source control measures may include:

- Vehicle and equipment noise specifications;

- Operational restrictions;
- Resilient or damped wheel treatments;
- Vehicle skirts, uncap absorption;
- Spin-slide control measures;
- Wheel truing;
- Rail grinding;
- Turn radii greater than 1000 feet;
- Rail lubrication on sharp curves; and
- Movable-point frogs.

Path controls measures may include:

- Sound barriers,
- Alteration of horizontal and vertical alignments,
- Acquisition of buffer zones,
- Ballast on at-grade and/or aerial guideways, and
- Resilient tract support.

Receiver control measures may include:

- Acquisition of property rights for construction of sound barriers,
- Building insulation, and
- Alternative building ventilation.

Vibration

For vibration, the need for a detailed vibration analysis will be assessed as part of the Tier 2 studies for the Preferred Alternative, Alternative 90B. This detailed analysis can also utilize detailed preliminary engineering design and operational data, and could include an assessment of potential mitigation measures such as:

- Planning and design of special trackwork;
- Vehicle specifications; and
- Special track support systems (i.e., resilient fasteners, ballast mats, resiliently supported ties, floating slabs, and other marginal treatments), and trenches.

4.21.6. Future Analysis

Any Tier 2 noise and vibration impact assessments performed for the Preferred Alternative, Alternative 90B, will apply the detailed analysis methodology described in the FRA and FTA guidance manuals. The study area will be reviewed to identify land use Categories 1 to 3 for noise and vibration, as discussed in Section 4.21.1. Tier 2 assessments would utilize detailed preliminary engineering design and operational data, and include identification of potential mitigation measures, as appropriate.

4.22. Contaminated and Hazardous Materials

Transportation projects that include the purchase of new right-of-way, excavation, and/or structure demolition or modification have the potential to encounter hazardous materials. The presence or release

of hazardous materials on construction sites can expose workers, residents and ecosystems to contaminants that may compromise their health. In addition, the identification of hazardous materials during construction can lead to project delays and can be costly.

4.22.1. Regulatory Context

At the federal level, the United States Environmental Protection Agency (U.S. EPA) regulates the use, storage, transportation and disposal of contaminated and hazardous materials. At the state level, the New York State Department of Environmental Conservation (NYSDEC) enforces many of the environmental regulations.

The U.S. Resource Conservation and Recovery Act (RCRA) of 1976 gives the U.S. EPA the authority to regulate hazardous waste from the “cradle-to-grave.”¹³⁶ This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also sets forth a framework for the management of non-hazardous solid wastes. In New York, the NYSDEC is authorized to implement the RCRA program in lieu of the U.S. EPA. NYSDEC issues the permits, conducts inspections, signs consent orders, and gathers and processes data.

The Comprehensive Environmental Resource Conservation and Liability Act of 1980 (CERCLA), commonly known as Superfund, created a tax on the chemical and petroleum industries and provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. The law authorized the U.S. EPA to identify parties responsible for contamination of sites and compel the parties to clean up the sites.¹³⁷

In 1984, Congress added Subtitle 1 to RCRA requiring the U.S. EPA to regulate underground storage tanks (USTs). The 1986 amendments to RCRA enabled the U.S. EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances.¹³⁸

In 1988, the U.S. EPA issued federal UST regulations laying out a comprehensive program for the monitoring and upgrading of USTs in the nation.¹³⁹

The New York State Navigation Law Oil Spill Prevention, Control and Compensation Act of 1977 regulates major oil storage facilities (MOSF).¹⁴⁰ This law and regulations (6 NYCRR Parts 610 and 611)¹⁴¹ regulates all oil terminals and transport vessels operating in the “waters of the State”, which have a storage capacity of 400,000 gallons or more (or MOSFs).

¹³⁶ United States Environmental Protection Agency, “Summary of the Resource Conservation and Recovery Act.” Accessed April 19, 2011. <<http://www.epa.gov/lawsregs/laws/rcra.html>>.

¹³⁷ Comprehensive Environmental Resource Conservation and Liability Act, 42 United States Code, Chapter 103, 1980.

¹³⁸ Resource Conservation and Recovery Act, 42 United States Code, Section 6901, 1976.

¹³⁹ Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks (UST), 40 Code of Federal Regulations, Part 280, 1988; Approval of State Underground Storage Tank Programs, 40 Code of Federal Regulations, Part 281, 1988.

¹⁴⁰ New York State Navigation Law Oil Spill Prevention, Control and Compensation Act, New York Environmental Conservation Law, Article 12, 1977.

¹⁴¹ New York State Department of Environmental Conservation, “Regulation of Major Oil Storage Facilities.” Accessed April 19, 2011. <<http://www.dec.ny.gov/chemical/2644.html>>.

4.22.2. Methodology

Areas of known releases were identified within a half-mile of the corridor centerline (program study area) using available federal and state databases. The following Geographic Information System (GIS) data layers were reviewed as part of this analysis.

- **Superfund CERCLIS (Comprehensive Environmental Response, Compensation, and Liability Information System)** is the tracking database authorized under the Superfund Amendment and Reauthorization Act (SARA) of 1986.
- The **National Priorities List (NPL)** is the list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories. The NPL is intended primarily to guide the U.S. EPA in determining which sites warrant further investigation under the Superfund cleanup program.¹⁴²
- **RCRA Info** databases track both Treatment, Storage, and Disposal facilities and Large Quantity Generators.
- **Toxic Release Inventory System (TRIS)** is a national database that tracks reported toxic chemical use (over 300 toxic chemicals listed), storage and/or permitted release to the environment (air, water or land).
- The **New York State Chemical Bulk Storage (CBS)** and the **NYS Petroleum Bulk Storage (PBS)** programs are regulated by the NYSDEC under the Hazardous Substance Bulk Storage Program.
- **Major Oil Storage Facilities (MOSF)** database tracks terminals or vessels with a capacity of 400,000 gallons or more.

4.22.3. Existing Conditions

Over 6,400 hazardous materials sites were identified within a half-mile of the corridor centerline (90/110 Study Area) and approximately 5,500 sites were identified within the 125 Study Area, as shown in Exhibit 4-35 and Appendix G.20. Of these, more than half (approximately 3,750) were identified in Manhattan. Appendix G.20 presents a county by county discussion of identified hazardous materials sites and presents information on the types of sites.

The Hudson River PCBs (polychlorinated biphenyl) Superfund Site is located in all of the counties along the 142-mile Empire Corridor South. This site encompasses a nearly 200-mile stretch of the Hudson River extending from Hudson Falls to Battery Park in New York City.¹⁴³ In February 2002, the U.S. EPA issued a Record of Decision (ROD) for the Hudson River PCBs Superfund Site that calls for targeted environmental dredging of approximately 2.65 million cubic yards of PCB-contaminated sediment from a 40-mile section of the Upper Hudson River extending north of Troy, upstream of the study area. The cleanup will occur in two phases.

¹⁴² United States Environmental Protection Agency. "National Priorities List." Accessed September 26, 2011. <<http://www.epa.gov/superfund/sites/npl>>.

¹⁴³ United States Environmental Protection Agency, "Hudson River PCBs." Accessed September 26, 2011. <<http://www.epa.gov/hudson/>>.

4.22.4. Environmental Consequences

Comparison of Alternatives

The presence or release of contaminated materials can expose workers and residents to substances that impose negative health effects. The acquisition of property can result in NYSDOT incurring liability, since the property owner is responsible for any contamination discovered after property acquisition. The presence of contaminated soil or groundwater can cause serious delays as a result of costly site investigations and remedial actions. Excavation activities to substantial depths in areas with contamination can result in high disposal costs from large volumes of soil. Deeper excavations increase the likelihood of encountering contaminated groundwater, which can also be costly to treat and dispose of.

Exhibit 4-35—Summary of Contaminated and Hazardous Materials Sites within the Study Area

County	Federal		State		Total	
	90/110 mph	125 mph	90/ 110 mph	125 mph	90/ 110 mph	125 mph
New York	70	70	3,678	3,678	3,748	3,748
Bronx	1	1	115	115	116	116
Westchester	32	32	20	20	52	52
Putnam	2	2	12	12	14	14
Dutchess	11	11	95	95	106	106
Columbia	2	2	11	11	13	13
Rensselaer	21	21	70	65	91	86
Albany	24	12	164	56	188	68
Schenectady	4	2	110	34	114	36
Schoharie	0	0	0	1	0	1
Montgomery	15	2	124	1	139	3
Herkimer	13	0	114	4	127	4
Oneida	27	7	254	22	281	29
Madison	2	3	16	26	18	29
Onondaga	42	41	196	198	238	239
Cayuga	1	0	10	1	11	1
Wayne	15	2	65	23	80	25
Monroe	90	86	283	279	373	365
Genesee	8	0	156	21	164	21
Erie	99	98	348	337	447	435
Niagara	27	27	64	64	91	91
Total	506	419	5,905	5,063	6,411	5,482

Note 1: Federal sites include: National Priority List, RCRA – Resource Conservation and Recovery Act, TRIS – Toxic Release Inventory System, State sites include: CBS – Chemical Bulk Storage, PBS – Petroleum Bulk Storage, MOSF – Major Oil Storage Facility.

Note 2: The 90/110 Study Area is used for analysis of Alternatives 90A, 90B, and 110 and consists of the existing 464-mile long Empire Corridor alignment. The 125 Study Area is used for analysis of Alternative 125 and consists of portions of the existing Empire Corridor and new alignment and is 450 miles long. The study area width is defined as being within a half-mile of the corridor centerline.

Source: NYS GIS Clearinghouse, New York State Department of Environmental Conservation.

NYSDEC. Accessed November 7, 2011. <<http://www.dec.ny.gov/geodata/DiscoveryServlet>>.

U.S. EPA. Accessed November 7, 2011. <http://www.epa.gov/enviro/geo_data.html>.

In addition to contamination from mapped hazardous materials facilities outside of the existing right-of-way, contamination can occur along railroad corridors as a result of industrial uses along the railroad corridor that rely on freight movements for shipping and deliveries. Most railroad corridors also have residual contamination from a variety of sources with contaminants ranging from metals, hazardous materials and petroleum products, and asbestos.

Program specifics (i.e., excavation depths, construction plans, etc.) have not yet been developed; therefore, the degree of likelihood to encounter long-term impacts from contamination is generally based on the discussion above.

Review of available records indicates that the Base Alternative and Alternative 90A would incur the least amount of long-term impacts as a result of the presence of contaminated materials. These alternatives would largely involve station improvements and work within the right-of-way, with tracks being added in the location of the former track beds or existing access roads. A moderate amount of long-term impacts would occur as a result of the presence of contamination within the existing railroad right-of-way and nearby mapped sites.

Alternative 90B (the Preferred Alternative) and Alternative 110 would have a greater potential to encounter contaminated materials than the Base and 90A Alternatives, especially where new third and fourth track subsurface work would occur within highly developed urbanized areas. However, the Preferred Alternative would involve substantially less work extending outside of the right-of-way and less property acquisitions than Alternatives 110 or Alternative 125.

Alternative 125 would include all the improvements considered under Alternative 90A and would also include the extension of 236 miles of new track and alignment. The new rail alignment would extend through a variety of rural, suburban, and urban areas and would require numerous property acquisitions; increasing NYSDOT's risk; however, in many suburban and rural areas these risks may be lower.

Short-term impacts due to construction activities are discussed in Section 4.25.3. The following section addresses the potential long-term impacts of the Preferred Alternative, and Appendix G.20 reviews the potential impacts of the other alternatives considered.

Alternative 90B (Preferred Alternative)

NYSDOT anticipates that work for the Alternative 90A projects that are part of the Preferred Alternative will be contained within the right-of-way, and thus no land acquisitions are expected; therefore, impacts would be reduced with the potential for encountering contaminated materials increasing with subsurface work.

In addition, Alternative 90B would include replacement of the Livingston Avenue Bridge, which extends over the Hudson River between the urbanized cities of Rensselaer and Albany (Rensselaer and Albany counties, respectively). The replacement of the bridge substructure, if proposed, would include extensive subsurface activities (i.e. installation of footings and piers) and therefore the potential to encounter contaminated soils and groundwater would be high. In addition, given the presence of the Hudson River polychlorinated biphenyl (PCB) site, there would be a higher likelihood that PCB-impacted sediment and surface water will be encountered during bridge construction activities.

Activities for the Preferred Alternative, Alternative 90B, would increase the likelihood of encountering contaminated soils and ground water as a result of additional infrastructure improvements including grade crossing modifications, new grade separated flyovers, culvert extensions and new cut areas. But in general, impacts would be similar to those described above under Alternative 90A.

There would be seven locations where new right-of-way would need to be acquired (MPs 168.3, 210.8, 215.6, 237.7, 286.4, 341.1 and 377.6). The acquisition of property would include a potential liability for NYSDOT if the properties currently or historically use, store or dispose of hazardous materials or petroleum products. Property acquisition would also include the acquisition of two current structures, which would require asbestos, lead and hazardous material surveys prior to demolition activities.

The three grade separated flyovers would be located at MPs 279, 366, and 427. The flyover at MP 279 would be located in a more rural area, and no mapped hazardous materials facilities are in the vicinity of the alignment. Flyovers at MPs 366 and 427 are located in more urban areas of Rochester and Buffalo, and there would be mapped PBS facilities located in the vicinity of the improvements. These structures would have a higher likelihood to encounter contaminated soil and groundwater as a result of caisson and abutment construction.

The Preferred Alternative, Alternative 90B, would also include station improvements at the Schenectady, Amsterdam, Utica, Rome, Syracuse, Rochester and Buffalo-Depew stations. Station improvements may entail a greater potential for subsurface excavations that could encounter contaminated soils and groundwater, which has the potential to lead to long-term aquifer contamination.

4.22.5. Potential Mitigation Strategies

Mitigation strategies for the Preferred Alternative, Alternative 90B, will focus on methods to avoid or minimize encounters with contaminated materials. Phase I and Phase II Environmental Site Assessments (ESAs) evaluate environmental issues and risks associated with a site, particularly prior to land acquisitions. A Phase I ESA consists of a review of regulatory records and historic information (e.g., maps, local government records); completion of a site visit; and interviews with owners, occupants, and local government officials. This information is compiled and reviewed to determine the presence of any on- or off-site sources of contamination that may impact the site, classified as Recognized Environmental Conditions (RECs). The Phase II ESA includes field sampling laboratory testing to evaluate the extents and severity of the issues.

Site-specific Health and Safety Plans and Materials Management Plans for the Preferred Alternative, Alternative 90B, will be developed to address contaminated soil and groundwater, as appropriate. If buildings containing lead or asbestos will be demolished, an Asbestos Abatement Plan and a Lead-Based Paint Assessment Plan will be developed.

4.22.6. Future Analysis

The Tier 2 analysis for the Preferred Alternative, Alternative 90B, will assess the potential to encounter contaminated sites, and, if necessary, determine the presence and extent of contamination, in more detail. This will allow NYSDOT to understand potential implications of actions increasing risks for encountering or handling contamination and refine the design to minimize them via efforts,

such as reducing soil or groundwater removal and disposal. If appropriate, the first step would be to investigate previous activities and current site uses, following the guidelines of an ASTM-compliant Phase I ESA. This would include the review of aerial photographs, historical (Sanborn) maps, database reports, site visits, and other historical sources. Based on the results of the Phase I ESA, further investigations (limited subsurface reports and Phase II ESAs) including the collection of surficial and subsurface soil samples and groundwater samples may be required to delineate the horizontal and vertical extents of contamination in problem areas.

4.23. Section 4(f)/Section 6(f)

4.23.1. Regulatory Context

This section addresses Section 4(f) and Section 6(f) protections and the preliminary assessments of potential Section 4(f)/Section 6(f) resources performed as part of this Tier 1 Final EIS. Section 4(f) of the U.S. Department of Transportation Act (for federally funded transportation projects) provides federal protection of publicly owned parkland and historic sites. Parklands are also protected under Section 6(f) of the U.S. Land and Water Conservation Fund (LWCF) Act (for LWCF-funded parks).

In the Tier 2 assessment(s), FRA will determine the need for additional Section 4(f) and/or Section 6(f) Evaluation(s), as appropriate, for individual improvement projects comprising the Preferred Alternative.

Section 4(f)

Section 4(f) of the U.S. DOT Act (49 U.S.C. 303(c)) of 1969, as amended, states that the Secretary of the U.S. DOT shall not approve any program or project that requires the “use” of any land from a public park, recreation area, wildlife and waterfowl refuge, or historic site, unless there is no feasible and prudent alternative, and such project or program includes all possible planning to minimize harm. Under Section 4(f), there are three types of transportation uses that may occur:

- **Permanent Use:** Land is permanently incorporated into the transportation facility through outright purchase of the land or through acquisition of sufficient property interests (such as obtaining a permanent easement).
- **Temporary Use:** Temporary occupancy of land creates an adverse effect for the purposes of Section 4(f), including right-of-entry, project construction, temporary easement, or other temporary arrangement involving Section 4(f) property. Temporary occupancy will not constitute a Section 4(f) use if all of the following conditions are met:
 - Duration must be temporary (shorter than construction duration) and there should be no change in ownership of the land;
 - Scope of the work (nature and magnitude of the change to the Section 4(f) property) must be minimal;
 - There are no anticipated permanent adverse physical impacts, nor interference with protected activities, features, or attributes of the property on a temporary or permanent basis;
 - The property must be fully restored and returned to pre-construction conditions;
 - There must be documented agreement of the officials with jurisdiction over the Section 4(f) resource of the above conditions.

- **Constructive Use:** In the absence of a permanent or temporary use, a constructive use occurs when the proximity impacts on a Section 4(f) property are so severe that the activities, features, or attributes of the Section 4(f) resource that qualify it for protection are substantially impaired.

Section 4(f) also considers the “use” from indirect impacts (i.e., effects on context, setting, or access).

Amendments to Section 4(f) under the 2005 Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) established procedures for *de minimis* impact determinations, when the transportation use does not adversely affect the activities, features, or attributes that qualify the resource for Section 4(f) protection. These procedures include affording an opportunity for public review and comment and receiving written concurrence from the officials with jurisdiction over the property.

Under the FAST Act, Section 11502 (23 U.S.C. 138[f]/49 U.S.C. 303[h]) exempts from Section 4(f) review the use of railroad and rail transit lines, or elements thereof (except for stations or bridges/tunnels not in use), that are in use or historically used for the transportation of goods or passengers. The FAST Act also incorporates a Section 4(f) exemption for common post-1945 concrete or steel bridges and culverts, which is already programmatically exempted from individual review under Section 106.

Section 6(f)

Under Section 6(f) of the U.S. Land and Water Conservation Fund (LWCF) Act, the United States Department of the Interior (DOI) provides funding for state, county, and local efforts to advance public recreation. Once LWCF funds are utilized to acquire or develop, either partially or wholly a particular recreation project, conversion of that park facility for any non-recreational purpose is prohibited unless alternatives are assessed and steps are taken to identify, evaluate, and supply replacement parkland. In addition, the Secretary of Interior must grant prior approval for the conversion and replacement parkland. The replacement property must have equal fair market value as the converted property and must be at least as useful and of similar location as the converted property.

If a Section 6(f) property has been identified near, adjacent to, or within a project area, the decision must be made as to whether or not there will be a conversion or a change in use of the property. A conversion occurs when the use of a Section 6(f) site is changed for longer than six consecutive months to something other than what was funded, regardless of whether the change is temporary or permanent.

If there is a partial conversion or use of the Section 6(f) property, an evaluation of the remaining Section 6(f) property should be conducted to determine whether there has been a change to its usefulness as a viable public outdoor recreation area. If the conversion is approved by the National Park Service and it is determined that the remaining property is altered to the point in which the usefulness has diminished, further evaluation and coordination should take place to establish whether the remaining land should be replaced as well.

A conversion could also occur when a project crosses or effects the same property where the Section 6(f) resource is located, and would not directly affect the Section 6(f) resource, but would affect access to or other reasonable use of the Section 6(f) resource on the site for more than six months.

4.23.2. Methodology

Parks and recreation areas for study areas within 1,000 feet of the corridor centerline for all alternatives were identified using existing mapping collected from federal and state agencies, including the New York State GIS Clearinghouse, New York State Office of Parks, Recreation, and Historic Preservation (NYSOPRHP) and New York State Department of Environmental Conservation (NYSDEC), as well as review of aerial photography and Google street mapping, as presented in Section 4.16. This section also addresses tribally-owned recreational facilities.

For the purposes of this Tier 1 EIS, the Areas of Potential Effects (APEs) for potential direct effects on historic architectural sites and archaeological sites have been delineated to extend within 100 feet from the centerline of the existing railroad tracks and within 100 feet from each alternative to encompass all locations where project construction activities could occur, as described in more detail in Section 4.15. The APE for indirect effects on historic architectural sites has been delineated to extend 600 feet in both directions from the centerline of the existing railroad tracks and from each alternative. The 600-foot APE was developed in consultation with SHPO and federally-recognized tribes to encompass potential indirect effects that could be reasonably foreseen at the Tier 1 level resulting from construction activities associated with the proposed program, as described above.¹⁴⁴ Appendix G.14 includes an inventory of all architectural resources within the direct APE.

When the Section 106 identification and evaluation process is being conducted in a phased manner, as described in 36 CFR 800.4(b)(2), the final identification and evaluation of historic properties may be deferred to future stages of the program if the protocol for the process is established in a Programmatic Agreement or Memorandum of Agreement. In accordance with this guidance, this Tier 1 EIS focuses on identifying the “likely presence” of historic properties in the APE for each alternative by identifying previously-designated architectural resources and previously-identified archaeological sites. More information on the assessment methodology is presented in Appendix G.14.

Identification of historic properties in the APEs from potential architectural resources (such as State Register eligible properties) would occur in Tier 2 assessments to determine National Register eligibility, as appropriate. To date, no detailed archaeological documentary studies or archaeological field investigations (Phase I archaeological studies) have been prepared as part of the Tier 1 analysis. As described above, previously-identified archaeological sites have been mapped and inventoried to serve as a preliminary indicator of archaeological sensitivity within the APEs. In order to identify archaeological historic properties that could be affected by the program, archaeological documentary studies and field investigations (as appropriate) would be carried out as part of the final identification efforts for the Tier 2 analysis.

The purpose of developing a conceptual “alignment” for Alternative 125 in the Tier 1 EIS is to provide a basis for comparison of corridor-level performance, cost, and impact potential of a new corridor alternative versus existing corridor alternatives (i.e. Alternatives 90A, 90B, and 110). The intended purpose of this Tier 1 EIS is to make broad-corridor level decisions with regard to parameters such as operating speed/travel times, service frequency, and infrastructure requirements.

¹⁴⁴ Although FTA noise standards set a standard screening distance of 750' (unobstructed) and (375' obstructed) for noise analyses, preliminary noise analyses completed as part of this Tier 1 EIS indicate that the area in which there is the potential for the proposed program alternatives (with the exception of Alternative 125) to result in noise impacts is substantially smaller than the areas delineated as the APEs for direct and indirect effects. In the case of Alternative 125, the potential for noise impacts is expected to vary by location.

4.23.3. Existing Conditions

Parks and Recreational Areas

Overview

The existing parks and recreation areas in the study area are concentrated in two main areas: the Hudson River Valley and the New York State Canal System within the Mohawk River Valley.

- The Hudson River Valley has a concentration of national, state, county, and municipal parks and recreation areas due to its location and scenic views, as well as the concentration of population centers that developed along the river. The area also has a rich cultural and economic heritage and hosts a number of historic districts and sites. The national and state historic sites are important recreational tourism destinations.
- The **New York State Canal System**, owned by the New York State Canal Corporation provide recreational opportunities for water-based navigation and trail users. The **New York State Canalway Trail System** is comprised of a network of more than 300 miles of existing multi-use, recreational trails across upstate New York. Major segments are adjacent to the waterways of the New York State Canal System or follow remnants of the historic original canals of the early 1800s that preceded today's working Canal System. The Canalway Trail System is comprised of four major segments: the Erie Canalway Trail, including the Old Erie Canal State Park Trail in Central New York; the Cayuga-Seneca Canal Trail, the Champlain Canalway Trail, and the Oswego Canalway Trail. Stretching from Buffalo to Albany the 360-mile Erie Canalway Trail, 277 miles of which are presently open to the public, closely follows much of the present and proposed Empire Corridor alignment. Portions of this canal system are nationally or state-designated heritage areas, parks, and trails.

The federal, state, regional, and local parks in the study area are shown in the following exhibits. There are several types of federally designated parks or recreation areas in the study area, including National Heritage Areas, a National Memorial, several NNLs, a National Wildlife Refuge, National Historic Sites, and National Scenic/Recreational Trails. Exhibit 4-36 summarizes the publicly owned acreage of the eight federally-protected potential 4(f) or 6(f) parkland resources within 1,000 feet of the corridor centerline for the 90/110 and the 125 Study Areas.

New York State has designated 24 state parks, areas of cultural and historic significance, state historic parks, and state historic sites that are administered by the NYSOPRHP and the New York Canal Corporation, as shown in Exhibit 4-37. New York state forests and state-owned Wildlife Management Areas are administered by the New York State Department of Environmental Conservation. The 16 NYSDEC sites, including state forests preserves, Unique Areas, Wildlife Management Areas, and boat launches within 1,000 feet of the corridor centerline for both the 90/110 and the 125 Study Areas are shown in Exhibit 4-38, one of which has received Section 6(f) funding.

There are roughly 100 county, municipal and non-profit parks identified within the study area. Exhibit 4-39 and Exhibit 4-40 show these parks within the 90/110 and 125 Study Areas and potential protections under Section 6(f) and Section 4(f). Exhibit G-33 in Appendix G.15 shows the locations of the parks and recreation areas in the study area.

Exhibit 4-36—National Memorials, National Scenic Trail, National Natural Landmarks, National Wildlife Refuges, and National Historic Sites and Preserves within Study Area

Name	County	Acreage within 2,000-foot-wide study area		Potential Section 4(f)	Potential Section 6(f)
		90/110 Study Area	125 Study Area		
General Grant National Memorial	New York	0.8	0.8	X	X
Appalachian National Scenic Trail	Putnam	0.4	0.4	X	X
Vanderbilt Mansion National Historic Site	Dutchess	143	143	X	X
Franklin D Roosevelt Home National Historic Site	Dutchess	82	82	X	X
Albany Pine Bush NNL **	Albany	462	283	X	X
Moss Island NNL	Herkimer	15		X	X
Montezuma National Wildlife Refuge	Wayne	1 (556*)		X	X
Bergen-Byron Swamp NNL	Genesee		457	X	X
*/ One acre of the Montezuma National Wildlife Refuge is in the study area, 556 acres of the Approved Acquisition Area for the refuge is in the study area. **/ Total acreage for Albany Pine Bush Preserve is 3,200 acres, a portion of which is in the study area. Note: The 90/110 Study Area is used for analysis of Alternatives 90A, 90B, and 110 and consists of the existing 464-mile long Empire Corridor alignment. The 125 Study Area is used for analysis of Alternative 125 and consists of portions of the existing Empire Corridor and new alignment and is 450 miles long. The study area width is defined as being within 1,000 feet of the corridor centerline.					

Source: National Park Service, U.S. Fish and Wildlife Service, New York State GIS Clearinghouse

Exhibit 4-37—State Parks, State Park Preserves, State Historic Sites

Facility Name	Facility Type	County/City	Acreage in Study Area		Potential Section 4(f)	Potential Section 6(f)
			90/110	125		
Hudson River Park	State Park	Manhattan	0.1	0.1	X	
Riverbank State Park	State Park	New York	26	26	X	X
Philipse Manor Hall	State Historic Site	Westchester	0.3	0.3	X	
Old Croton Aqueduct	State Historic Park	Westchester	18	18	X	X
Rockefeller State Park Preserve	State Park	Westchester	153	153	X	
Hudson Highlands State Park	State Park Preserve	Westchester	204	204	X	
Hudson Highlands State Park	State Park Preserve	Putnam	322	322	X	
Hudson Highlands State Park	State Park Preserve	Dutchess	398	398	X	
Hudson Highlands State Park Underwater Lands State Park	State Park	Dutchess	19	19	X	
Walkway over the Hudson State Park	State Park	Dutchess	0.3	0.3	X	
Margaret Lewis Norrie State Park	State Park	Dutchess	234	234	X	X
Staatsburgh State Historic Site	State Historic Site	Dutchess	1	1	X	X
Ogden Mills and Ruth Livingston Mills Memorial State Park	State Park	Dutchess	224	224	X	X
Clermont State Historic Site	State Historic Site	Dutchess	0.1	0.1	X	
Clermont State Historic Site	State Historic Site	Columbia	152	152	X	
Olana State Historic Site	State Historic Site	Columbia	74	74	X	
Conservation Easement (adjoining Olana site)	State Historic Site	Columbia	103	103	X	
Building envelope (adjoining Olana site)	Conservation easement	Columbia	7	7	X	
Hudson River Islands State Park	State Park	Columbia	11	11	X	
Schodack Island State Park	State Park	Columbia	14	14	X	X
Schodack Island State Park	State Park	Greene	9	9	X	X
Schodack Island State Park	State Park	Rensselaer	185	185	X	X
Lock 9 State Canal Park	NYS Canal Corporation	Schenectady	16	0	X	X
Guy Park	NYS Canal Corporation	Montgomery	2	0	X	
Schoharie Crossing	State Historic Site	Montgomery	18	0	X	X
Herkimer Home	State Historic Site	Herkimer	33	0	X	
Oriskany Battlefield	State Historic Site	Oneida	5	0	X	X
Old Erie Canal State Historic Park	State Historic Park	Madison	185	45	X	X
Old Erie Canal State Historic Park	State Historic Park	Onondaga	94	12	X	X
State Fairgrounds	NYS Department of Agriculture & Market	Onondaga	85	85	X	
State Park at the Fair	State Park	Onondaga	1	0.7	X	
Whirlpool State Park	State Park	Niagara	6	6	X	X

Note: The 90/110 Study Area is used for analysis of Alternatives 90A, 90B, and 110 and consists of the existing 464-mile long Empire Corridor alignment. The 125 Study Area is used for analysis of Alternative 125 and consists of portions of the existing Empire Corridor and new alignment and is 450 miles long. The study area width is defined as being within 1,000 feet of the corridor centerline.

Source: New York Office of Parks, Recreation, and Historic Preservation and NYS GIS Clearinghouse

Exhibit 4-38—New York State DEC Lands

Facility Name	County/City	Acreage within 2,000-ft.-wide Study Area		Potential Section 4(f)	Potential Section 6(f)
		90/110 Study Area	125 Study Area		
Tivoli Bay Wildlife Management Area	Dutchess	412	412	X	X
Middle Ground Flats Unique Area	Greene	9.0	9.1	X	
Middle Ground Flats Unique Area	Columbia	1.3	1.3	X	
Hudson River at Germantown	Columbia	*	*	X	
Stockport Flats Tidal Wetland	Columbia	31	31	X	
Rogers Island Wildlife Management Area	Columbia	90	90	X	
Hudson State Boat Launch	Columbia	0.2	0.2	X	
Stockport Flats Wildlife Management Area	Columbia	230	230	X	
Nutton Hook Tidal Wetland	Columbia	292	292	X	
Albany Pine Bush State Unique Area	Albany	138	124	X	X
Nelliston Boat Launch Site	Montgomery	*		X	
Plantation Island Wildlife Management Area (Lock 18 WMA)	Herkimer	50		X	
Oriskany Flats Wildlife Management Area	Oneida	265		X	
Rome State Wildlife Management Area	Oneida	269		X	
Carpenter's Creek Fisherman's Access	Onondaga	0.4		X	
Northern Montezuma Wildlife Management Area	Cayuga	75		X	
Northern Montezuma Wildlife Management Area	Wayne	184		X	
Tillman Road Wildlife Management Area	Erie		20	X	
*Site is a boat launch, acreage is not available Note: The 90/110 Study Area is used for analysis of Alternatives 90A, 90B, and 110 and consists of the existing 464-mile long Empire Corridor alignment. The 125 Study Area is used for analysis of Alternative 125 and consists of portions of the existing Empire Corridor and new alignment and is 450 miles long. The study area width is defined as being within 1,000 feet of the corridor centerline.					

Source: New York State GIS Clearinghouse, New York State Department of Environmental Conservation

Exhibit 4-39—County Parks within 1,000 feet of the Corridor Centerline

Park	County	Study Area Acreage		Potential Section 4(f)	Potential Section 6(f)
		90/110 Study Area	125 Study Area		
Lenoir Preserve (County Park)	Westchester	9	9	X	
Kingsland Point County Park	Westchester	16	16	X	
Croton Point County Park	Westchester	11	11	X	
Oscawana County Park (undeveloped)	Westchester	80	80	X	
Bowdoin County Park	Dutchess	105	105	X	X
Quiet Cove Riverfront Park	Dutchess	32	32	X	
Papscanee Island County Nature Preserve	Rensselaer	169	169	X	
Bergen Park	Montgomery	2.4*		X	
Onondaga Lake County Park	Onondaga	24	24	X	X
Black Brook County Park	Wayne	17		X	
Blue Cut County Nature Center	Wayne	20		X	
Swift Landing County Park	Wayne	23		X	
Churchville County Park	Monroe		72	X	X
DeWitt County Recreational Facility	Genesee	116		X	
*/ Bergen Park is approximately 2.4 acres and the entire park is within the 90/110 Study Area. Note: The 90/110 Study Area is used for analysis of Alternatives 90A, 90B, and 110 and consists of the existing 464-mile long Empire Corridor alignment. The 125 Study Area is used for analysis of Alternative 125 and consists of portions of the existing Empire Corridor and new alignment and is 450 miles long. The study area width is defined as being within 1,000 feet of the corridor centerline.					

Source: New York State GIS Clearinghouse, LWCF website: <<http://waso-lwcf.ncrc.nps.gov/public/index.cfm>>

Exhibit 4-40—Number of Municipal and Non-Profit Parks with 1,000 feet of the Corridor Centerline

County	Municipal Parks within 1,000 feet		Potential Section 6(f) Parks		Potential Section 4(f) Parks		Nonprofit
	90/110 Study Area	125 Study Area	90/110 Study Area	125 Study Area	90/110 Study Area	125 Study Area	
New York	12	12	5	5	12	12	
Bronx	4	4	1	1	4	4	
Westchester	20	20	6	6	20	20	1
Putnam	0	0	0	0	0	0	
Dutchess	12	12	3	3	12	12	
Columbia	1	1	0	0	1	1	1
Rensselaer	0	0	0	0	0	0	
Albany	7	8	2	1	7	8	
Schenectady	6	0	1	0	6	0	
Schoharie	0	0	0	0	0	0	
Montgomery	3	0	1	0	3	0	
Herkimer	2	1	1	0	2	1	
Oneida	0	1	0	0	0	2	1
Madison	1	0	1	0	1	0	
Onondaga	2	2	1	1	2	2	
Cayuga	0	0	0	0	0	0	
Wayne	1	0	0	0	1	0	
Monroe	7	9	2	2	7	9	
Genesee	3	0	0	0	3	0	
Erie	6	7	2	2	6	7	
Niagara	7	7	1	1	7	7	
TOTAL	94	84	27	22	94	84	3

Note: The 90/110 Study Area is used for analysis of Alternatives 90A, 90B, and 110 and consists of the existing 464-mile long Empire Corridor alignment. The 125 Study Area is used for analysis of Alternative 125 and consists of portions of the existing Empire Corridor and new alignment and is 450 miles long. The study area width is defined as being within 1,000 feet of the corridor centerline.

Source: New York State GIS Clearinghouse, New York State Office of Park, Recreation, and Historic Preservation, and National Park Service LWCF website: < <http://waso-lwcf.ncrc.nps.gov/public/index.cfm> >

Historic and Cultural Resources

Archaeology

Exhibit 4-19 and Exhibit G-22 of Appendix G.14 identify the number and type of sites in each county in the direct APEs for the 90/110 Alternative and the 125 Alternative. A total of 166 previously-identified archaeological sites have been identified within the direct APE for the 90/110 Alternative that extends along the Empire Corridor South/West and the Niagara Branch. A total of 126 previously-identified archaeological sites have been identified within the direct APE for the 125 Alternative that extends along the Empire Corridor South/West and the Niagara Branch.

Historic Architectural Resources

Previously-identified historic architectural resources located within the direct APE for the 90/110 Alternative and the 125 Alternative are summarized in Exhibit 4-41. Detailed tables listing the S/NR-listed and eligible individual resources are provided in Appendix G.14. The approximate locations of these resources are illustrated on Exhibit G-24. The previously identified architectural resources within the indirect APEs are summarized in Exhibit 4-42.

A total of 79 previously-identified historic architectural resources are located in the direct APE for the 90/110 Alternative that extends along the Empire Corridor South/West and the Niagara Branch. These resources are summarized by county in Exhibit 4-41. Of the 80 architectural resources, three resources are NHLs: Fort Klock in St. Johnsville, Montgomery County, the Hudson River Historic District in Dutchess and Columbia counties, and the New York State Barge Canal Historic District. At least four S/NR-eligible resources directly associated with the railroad are located in the direct APE.

It should be noted that approximately 350 bridges meeting the 50-year age criterion for S/NR eligibility are located within the existing railroad alignment and thus within the direct APE.

The resources within the 100-foot direct APE were included in the 600-foot indirect APE. A total of 356 previously-identified architectural resources are located in the indirect APE for the 90/110 Study Area that extends along the Empire Corridor South/West and the Niagara Branch. These resources are summarized in Exhibit 4-42. Of the 356 architectural resources, five are NHLs. At least eight S/NR-listed resources directly associated with the railroad are located within the indirect APE.

A total of 60 previously-identified architectural resources are located in the direct APE for the 125 Alternative that extends along the Empire Corridor South/West and the Niagara Branch. These resources are summarized by county in Exhibit 4-41. Of the 60, two are NHLs: the Hudson River Historic District in Dutchess and Columbia counties and the New York State Barge Canal Historic District.

A total of 235 previously-identified architectural resources are located in the indirect APE for the 125 Study Area that extends along the Empire Corridor South/West and the Niagara Branch. These resources are summarized by county in Exhibit 4-42. Of the 235 resources, three are NHLs.

Exhibit 4-41—Historic Architectural Resources within the Direct APE for each Alternative

County	NHL		S/NR-Listed/Eligible Resources - Individual		S/NR-Listed/Eligible Resources - Districts		Total Resources	
	90/ 110	125	90/110	125	90/110	125	90/110	125
New York			7	7			7	7
Bronx			1	1			1	1
Westchester			14	14	1	1	15	15
Putnam			3	3	2	2	5	5
Dutchess			13	13	2	2	15	15
Columbia			2	2	2	2	4	4
Greene							0	0
Rensselaer			3	2	1	1	4	3
Albany			2		1		3	0
Schenectady				1	1		1	1
Montgomery	1		9		1		11	0
Herkimer			1		1		2	0
Oneida			2				2	0
Madison				1			0	1
Onondaga							0	0
Cayuga							0	0
Wayne							0	0
Monroe			2	1	1	1	3	2
Genesee					1		1	0
Erie			1	2	1	1	2	3
Niagara			1	1			1	1
Multiple Counties	2	2					2	2
TOTALS	3	2	61	48	15	10	79	60
Note: Counties are listed from south to north, then east to west. Resources that fall within the direct APE are also within the boundaries of the indirect APE. The 90/110 Study Area is used for analysis of Alternatives 90A, 90B, and 110 and consists of the existing 464-mile long Empire Corridor alignment. The 125 Study Area is used for analysis of Alternative 125 and consists of portions of the existing Empire Corridor and new alignment and is 450 miles long.								

Exhibit 4-42—Historic Architectural Resources within the Indirect APEs

County	NHL		S/NR-Listed/Eligible Resources - Individual		S/NR-Listed/Eligible Resources - Districts		Total Resources	
	90/ 110	125	90/110	125	90/110	125	90/110	125
New York			62	62	7	7	69	69
Bronx			4	4			4	4
Westchester	1	1	36	36	3	3	40	40
Putnam			5	5	2	2	7	7
Dutchess			31	31	5	5	36	36
Columbia			7	7	2	2	9	9
Greene							0	0
Rensselaer			32	13	1	1	33	14
Albany			6	2	2		8	2
Schenectady	1		4	3	2	1	7	4
Montgomery	1		50		3		54	0
Herkimer			17		1		18	0
Oneida			8		1		9	0
Madison			6	1	1		7	1
Onondaga			1	1	1	1	2	2
Cayuga							0	0
Wayne			1		1		2	0
Monroe			20	19	9	9	29	28
Genesee			1		2		3	0
Erie			8	9	3	2	11	11
Niagara			6	6			6	6
Multiple Counties	2	2					2	2
TOTALS	5	3	305	199	46	32	356	235
Note: Counties are listed from south to north, then east to west. Resources that fall within the direct APE are also within the boundaries of the indirect APE. The 90/110 Study Area is used for analysis of Alternatives 90A, 90B, and 110 and consists of the existing 464-mile long Empire Corridor alignment. The 125 Study Area is used for analysis of Alternative 125 and consists of portions of the existing Empire Corridor and new alignment and is 450 miles long.								

4.23.4. Environmental Consequences

For purposes of this analysis, environmental effects were noted for those parks, recreational areas, wildlife and waterfowl refuges, and historic resources that may potentially be subject to protection under Section 4(f), as well as parklands subject to protection under Section 6(f). At the Tier 1 level, the potential for those effects are noted in the following sections, although the final determination will occur in Tier 2 assessment(s) as to whether this could result in a Section 4(f) use and/or a Section 6(f) conversion.

Parks and Recreational Areas

This preliminary assessment based on Tier 1 concepts and mapping considers direct and indirect effects on adjoining parks and those parks and recreational facilities within 1,000 feet of the program elements. It will be further refined in Tier 2 as the project development process for the Preferred Alternative, Alternative 90B, is further advanced. As the design advances for the Preferred

Alternative, Alternative B, efforts will be made to avoid parkland encroachments.

Review of aerial and parklands mapping indicates that the Base Alternative, Alternative 90A, and Alternative 90B (the Preferred Alternative) have a lower likelihood of directly affecting parklands or indirectly affecting parklands outside of the right-of-way in ways that would result in Section 4(f) uses or Section 6(f) conversions. The potential effects of Alternative 90B (the Preferred Alternative) are addressed in more detail in Section 4.16.4. These alternatives would largely involve work within the right-of-way, with tracks being added in the location of the former track beds or existing access roads. The proposed work will include the addition of track, as well as maintenance service roads in selected areas. Alternative 125 has the potential to involve more parklands and recreational facilities than any other alternative, with 10 such facilities in 6 counties within the affected environment (including an Oneida Nation-owned golf course). With the possible exception of two crossings of the Mohawk River and Erie Canal for Alternatives 90B and 110, only Alternative 110 has the potential to affect one recreational facility, a county park, that may be protected under Section 4(f) and/or Section 6(f). Please refer to Exhibit 4-36 to Exhibit 4-40 for a comparison of potential impacts to parks and recreation areas by alternative study areas.

Historic and Cultural Resources

As described under “Existing Conditions,” previously-identified archaeological sites and architectural resources within the direct APE, and architectural resources within the indirect APE, have been inventoried and mapped. Because the design of program improvements has not progressed to a point sufficient to enable site-specific analyses, Section 4(f) use determinations for architectural and archaeological resources will not be provided as part of this Tier 1 Assessment. The Tier 2 level analysis will include an analysis of the Preferred Alternative’s, Alternative 90B’s, potential to result in a Section 4(f) use of specific architectural and archaeological resources.

Section 4(f) includes protections of historic sites of local, state, or national significance (eligible or listed properties). Historic properties also include artifacts, records, and material remains that are related to and located within such properties, and properties of religious and cultural importance to an Indian Tribe or Native Hawaiian organization, and that meet the National Register criteria. Traditional cultural properties may also be protected under Section 4(f) if they are on or eligible for listing on the National Register of Historic Places.

Implementation of the Build Alternatives could result in a “use” of cultural resources and historic properties protected under Section 4(f) through physical disturbance or demolition of the resource, proximity effects such as noise and vibration, or proposed changes to the visual character or aesthetic qualities. It is important to differentiate National Historic Landmark resources protected under Section 4(f) as these resources require the most stringent consultation under Section 106 of the NHPA to resolve adverse effects.

To the extent that the scope and activities of the various alternatives and their potential impacts can be identified, this information is provided below. Note that potential direct and indirect effects were identified only for areas within the APE for each alternative where work is proposed. A comparison of the number of resources that could be affected by the Base Alternative, Alternative 90A, Alternative 90B (the Preferred Alternative), Alternative 110, and Alternative 125 is provided in Exhibit 4-43 and summarized below.

The Preferred Alternative (Alternative 90B) would involve greater potential to directly or indirectly affect resources than the Base Alternative, and Alternatives 90A and 125. Alternative 90B could

affect a total of 303 archaeological and architectural resources (including NHLs, S/NR-listed and eligible individual resources and districts) within the direct and indirect APEs. This compares to direct or indirect effects to 100 archaeological and architectural resources for Alternative 90A, 24 resources for the Base Alternative, and 122 resources for Alternative 125. Impacts for the Preferred Alternative would be roughly comparable to that for Alternative 110, which would affect 302 archaeological and architectural resources within the direct and indirect APEs. Although the estimate of resources affected by Alternative 125 is lower, this alternative will involve far greater disturbance to undisturbed ground. The lower estimate may reflect unidentified archaeological and architectural sites in more rural areas.

The number of archaeological and architectural resources that would potentially be directly affected by the Preferred Alternative is 154, compared to 48 for Alternative 90A, 153 for Alternative 110, and 86 for Alternative 125. Although the number of resources within the direct APE are similar for Alternative 110 and the Preferred Alternative, the potential for impacts would most likely be greater for Alternative 110 due to the location of the proposed tracks 15 feet further than for Alternative 90B.

Exhibit 4-43—Comparison of Potential Impacts to Archaeological Sites and Architectural Resources, by Alternative

RESOURCE TYPE	NUMBER OF RESOURCES														
	Base Alternative			90A			90B			110			125		
	Direct	Indirect	TOTAL	Direct	Indirect	TOTAL	Direct	Indirect	TOTAL	Direct	Indirect	TOTAL	Direct	Indirect	TOTAL
Archaeological Sites	N/A	N/A	3	30	N/A	30	88	N/A	110	86	N/A	108	35	N/A	57
NHLs	N/A	N/A	0	1	1	2	1	N/A	2	1	N/A	2	0	N/A	1
S/NR-listed/eligible Historic Districts	N/A	8	8	5	6	11	6	18	33	6	18	33	0	0	9
S/NR-listed / eligible Individual Resources	N/A	15	15	12	45	57	12	99	158	12	100	159	3	5	55
TOTAL	0	24	24	48	52	100	107	117	303*	105	118	302*	38	5	122*

Note: Resources that fall within the direct APE (D) are also located within the boundaries of the (I) indirect APE, as indicated in the Total column.

*The following resources identified in Alternative 90A for the Empire Corridor South are included in the total resource count for Alternatives 90B, 110, and 125: 22 archaeological sites; 1 NHL; 9 S/NR-listed Historic Districts; and 47 S/NR-listed or eligible Individual resources.

4.23.5. Measures to Minimize Harm

Parks and Recreational Areas

The design for the Preferred Alternative, Alternative 90B, will continue to be refined to avoid protected Section 4(f)/6(f) parklands and recreation areas and minimize unavoidable encroachments to the extent practicable. During environmental compliance efforts associated with Tier 2 projects, if applicable, Section 4(f) evaluations will be completed to fully evaluate permanent and temporary uses and de minimis impacts. Mitigation measures required for any encroachments

will be developed, in consultation with officials with jurisdiction. If parklands that have received Land and Water Conservation Fund Act grants will be converted, Section 6(f) requires that recreation property of equal fair market value and usefulness be provided as compensation as required under Section 6(f).

Mitigation measures may include permanent measures, such as providing trail connections or compensatory parkland, or construction mitigation, such as maintaining trail or park access during construction or using time-of-year restrictions on construction work. Other considerations will include ameliorating potential visual and noise impacts on adjoining parks or recreation areas, and further assessments of these impacts of the Preferred Alternative, Alternative 90B, and mitigation measures will also be advanced in Tier 2.

Historic and Cultural Resources

Measures to minimize harm to cultural resources and historic properties will be developed during the Section 106 process for the component projects advanced for the Preferred Alternative, Alternative 90B, at the Tier 2 level. As applicable, the Tier 2 assessments would adopt a Section 106 process outlining future identification, evaluation, and assessment of effects to historic properties including processes for the resolution of adverse effects. If unavoidable potential direct and/or indirect adverse effects are identified during the Tier 2 analysis, more detailed and specific measures to avoid, minimize and/or mitigate these effects would be defined and implemented in consultation with SHPO, involved THPOs and/or Tribal Organizations, ACHP (if appropriate), and any involved consulting parties.

For archaeological resources, mitigation measures that may be identified for component projects for Alternative 90B, the Preferred Alternative, at the Tier 2 level may include:

- Phase III data recovery, documentation,
- geoarchaeological survey,
- preparation and implementation of archaeological protection plans, and/or
- preparation of public education materials.

For architectural resources, possible mitigation measures include:

- The preservation or relocation of historic buildings;
- Documentation of resources following Historic American Buildings Survey (HABS)/Historic American Engineering Record (HAER) standards;
- Production of educational materials interpreting the history and significance of affected resources for use by local libraries, historical societies, and educational institutions; and
- Installation of signage interpreting the history and significance of affected resources along the proposed rail corridor, or planting vegetation or creating noise barriers along the proposed rail corridor.

Furthermore, in order to avoid inadvertent damage to historic resources located in close proximity to possible project construction, a Construction Protection Plan (CPP) would be prepared, as appropriate. The CPP would identify the historic resources to be included in the plan. It would also set for the specific measures to be used and specifications that would be applied to protect these resources during the construction period.

4.23.6. Future Analysis

The Tier 1 concepts and screenings were conceptual in nature, and not developed to a level that allows full evaluation of park and historic impacts; these assessments occur in Tier 2. If federal Department of Transportation funding applies, then the applicability of Section 4(f) will be evaluated for the Tier 2 projects. The applicability of Section 6(f) under the LWCF would be determined for federal or state funded projects.

The applicability of the recently enacted railroad exemptions under the Fixing America's Surface Transportation Act (FAST Act) from both Section 4(f) and Section 106 would be examined in Tier 2 assessments, when details are available regarding project-specific proposals and their relationship to the railroad right-of-way.

Section 4(f) of the U.S. Department of Transportation Act applies to two categories of resources: 1) publicly owned public parks, recreation areas, and wildlife or waterfowl refuges; and 2) significant historic sites, regardless of whether they are publicly or privately owned. The extent of impact and use of Section 4(f) properties will be determined, including the extent to which a "constructive use," "temporary occupancy" of the property, or "*de minimis* impact" may occur, and potential impacts on Section 4(f) properties will be assessed

Section 4(f) has prohibited the U.S. DOT from approving the "use" of Section 4(f) properties unless U.S. DOT makes two findings: 1) that there is no feasible and prudent alternative that avoids the use of Section 4(f) properties, and 2) that the project incorporates all possible planning to minimize the harm that results from the use of those resources. Avoidance and minimization measures will be evaluated in Tier 2, and if it is not possible to eliminate impacts on Section 4(f) resources, appropriate mitigation measures will be identified. The process for evaluations of parks and historic properties are discussed further in the following sections.

Parks and Recreational Areas

For potential parkland impacts, the applicability of Section 4(f) of the U.S. Department of Transportation Act and Section 6(f) of the U.S. Land and Water Conservation Act will be determined. If a Section 4(f) use may occur, consultation with public officials and property owners/officials with jurisdiction will be performed regarding the use of the parks/recreation areas and potential impacts and mitigation measures. Those parklands for which Land and Water Conservation funds were expended will also be identified.

Section 4(f) requires the U.S. DOT to seek comments from the U.S. Department of the Interior (and in some cases other agencies) before making these findings. The extent of impact of the Preferred Alternative, Alternative 90B, and use of Section 4(f) properties will be determined, and potential impacts on Section 4(f) properties will be assessed. If a use of a Section 4(f) park or recreation property is determined to occur, a Section 4(f) Evaluation will be prepared and circulated as part of Tier 2.

Section 6(f) applies to parklands on which Land and Water Conservation Funding has been expended. If the Preferred Alternative, Alternative 90B, would involve a Section 6(f) conversion, then a Section 6(f) Evaluation must be prepared as part of Tier 2 and approved by the National Park Service. The Section 6(f) Evaluation must evaluate all practical alternatives to converting the Section 6(f) property and demonstrate that there are no feasible means of avoiding the conversion. If a conversion will occur, the Section 6(f) Evaluation must identify replacement property to be acquired of reasonably

equivalent usefulness and location and of at least equal fair market value to the converted property.

Historic and Cultural Resources

If there is no federal involvement in future tiers or phases of the project, such as grant funding, permits or approvals, then only New York State Historic Preservation Act of 1980 (SHPA) would apply to those future tiers or phases and Section 106 of NHPA and Section 4(f) would not be applicable.

If Tier 2 does involve federal funding, the Tier 2 assessments would need to determine the applicability of the recently enacted railroad exemptions in the Fixing America's Surface Transportation Act (FAST Act). The FAST Act excludes from Section 106 review the placement of track in former track locations within railroad rights-of-way and certain railroad bridges. Section 11502 of the FAST Act also exempts from Section 4(f) review the use (improvements to or rehabilitation) of railroad lines that are in use or historically used for transportation, whether the element is listed on or is eligible for listing on or is eligible for listing on the National Register of Historic Places.

As described in the "Methodology" section, the environmental compliance for this program is being conducted using a phased approach. Section 4.15.6 outlines the future historic assessments to be conducted in Tier 2 in detail for potential historic resource impacts. For historic resources potentially affected, additional evaluation for Tier 2 analysis could include, as appropriate, determination of National Register eligibility of potential S/NR architectural resources that meet the S/NR criteria.

If the analysis concludes that a proposed project within the Alternative 90B program would have an adverse effect, measures to avoid, minimize, or mitigate adverse effects would be identified.

In addition to Section 106, the effects of the undertaking on historic properties would also be considered under Section 110 of NHPA and Section 4(f) as part of a separate future analysis. Section 110 of NHPA mandates additional protection of NHLs by requiring that federal agencies undertake planning and actions as necessary to minimize harm when considering undertakings that may directly and adversely affect NHLs. Section 4(f) prohibits actions by the Secretary of Transportation that require "use" of a historic property that is listed in or eligible for inclusion in the National Register, unless a determination is made that there is no feasible and prudent alternative to the use of such land, and all possible planning has been undertaken to minimize harm to the 4(f) property.

4.24. Indirect and Cumulative Impacts

Indirect and cumulative impacts include reasonably foreseeable actions and proposed and planned actions, both by NYSDOT and by other agencies. This Tier 1 evaluation presents a generalized assessment of these impacts based on Tier 1 concepts that would be further refined in the Tier 2, once the scope and timing of improvement projects are better defined.

4.24.1. Regulatory Context

The National Environmental Policy Act regulations promulgated by the Council of Environmental Quality define both indirect effects and cumulative impacts,¹⁴⁵ as follows:

¹⁴⁵ Council of Environmental Quality Regulations for Implementing NEPA, 40 CFR 1508.7 and 1508.8, December 21, 1984.

"Indirect) effects, are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems."

"Cumulative impact" is the impact on the environment, which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

4.24.2. Environmental Consequences

Comparison of Alternatives

Cumulative impacts account for the total impact on the environment of incremental actions over time. The suite of railroad improvements along the Empire Corridor that are either proposed or are in the planning stages (e.g., station, track, and signal improvements along the Empire Corridor) have largely been incorporated into the program alternatives as part of the Base or 90A Alternatives. These are carried through to Alternatives 90B, 110, and 125 to varying degrees. This section considers the cumulative impacts of other transportation and infrastructure improvements, as well as indirect impacts such as secondary development, as described below. Appendix G.21 presents other improvements that may also affect the cumulative environmental impact, although these are localized in the immediate area of the proposed improvements. Many of these improvements are minor highway widenings or access/interchange improvements that do not extend more than a mile or so in length and therefore would have a very localized effect, if any.

Indirect impacts include impacts associated with developments that would occur later in time that the program could potentially induce. This type of secondary development would most likely be centered on the existing passenger stations. The improvements in rail service may enhance the attractiveness of the area for businesses and residents, thereby potentially encouraging secondary development. Although this effect may be widespread along the rail corridor, its effects may be most pronounced in the vicinity of the existing station sites. However, since, for the most part, the stations will not be relocated, the potential for secondary development would be smaller than if a new station were constructed or an existing station were to be relocated. Moreover, the potential for development is influenced by factors that include local zoning, market forces, adequate infrastructure and transportation access, and extent of existing development and availability of land for redevelopment/development. Even though secondary development may not occur if passenger rail service improvements are implemented, it is anticipated that there is an increased potential for more indirect economic effects (increase in property values, increased business sales, and even increase in jobs) to occur with improvements in passenger rail service. The additional trackage would also benefit freight transportation, which would also result in economic benefits to the freight rail users and shippers that use or are located along the route.

Of the alternatives evaluated, the Base and 90A Alternatives would involve the least indirect and cumulative impacts. Alternatives 110 and 125 would involve the greatest indirect and cumulative impacts, and would involve the greatest economic and air quality benefits and transportation changes, the great degree of secondary development impacts, and the greatest adverse socioeconomic displacements and environmental impacts. The Preferred Alternative would involve cumulative and indirect impacts that

would be greater than the Base and 90A Alternatives, but would be more moderate than Alternatives 110 and 125. This section examines the indirect and cumulative impacts of the Preferred Alternative. Appendix G.21 presents the context for the evaluations and the indirect and cumulative impacts of the other alternatives considered.

Alternative 90B (Preferred Alternative)

Major new infrastructure investments, such as improvements to high-speed rail service, could potentially change the population and employment outlook. For example, according to a U.S. Conference of Mayor's Report, which examined the impact of high-speed rail upon the City of Albany, the introduction of high-speed rail along the corridor can contribute substantially to economic growth by driving higher-density, mixed-use development at train stations; expanding visitor markets and generating additional spending; broadening regional labor markets; and supporting the growth of technology clusters.¹⁴⁶

The additional tracks segregating freight and passenger service will not only accrue economic benefits from increased ridership, but will also benefit freight rail and movement of goods. Empire Corridor West represents one of CSXT's highest volume freight routes nationwide. The economic benefits associated with the project will extend to freight rail users and shipping companies, as the additional trackage will provide better travel times and less delays for freight. This major freight corridor connects to the border crossing at Niagara Falls, an economically important gateway for international trade.

The station improvements for Alternative 90B also have the potential to increase economic benefits to these cities. Secondary impacts for component projects of Alternative 90B include potential for benefits and secondary development anticipated with new station buildings to be constructed at Amsterdam and Buffalo-Depew Stations. There may be more potential for secondary development in the City of Buffalo, as this station is more centrally located to business or industrial districts and is also a larger city. However, the Buffalo-Depew Station is located within an industrial area and physically isolated from nearby commercial activity. The existing Amsterdam Station is located on the western outskirts of the City of Amsterdam, and land use patterns include established residential neighborhoods with limited commercial development or zones scattered in the surrounding area and somewhat removed from the existing station. If the new station buildings for Buffalo-Depew and Amsterdam are relocated closer to established commercial activity centers, there would be an increased potential for secondary development.

With the proposed improvements in passenger rail service, this alternative would have a greater potential to increase economic benefits to cities primarily at the station sites. The highest potential for secondary development may occur at Niagara Falls, and major cities in Schenectady, Rochester, and Buffalo where station improvements were recently constructed, as well as other urban centers with station sites.

This alternative would have a somewhat greater potential for secondary development than the Base/90A Alternatives due to improved passenger rail service. However, the potential for any environmental impacts (traffic, land use, community, wetlands, parklands, air quality, noise, etc.) is limited to some extent by the heavily urbanized areas around many of the existing stations, which would limit the potential for impacts to undeveloped lands, farmlands, and natural resources, such as wetlands, and endangered species habitats impacts. Any secondary development in these urban

¹⁴⁶ Economic Development Research Group, Inc. *The Economic Impact of High Speed Rail on Cities and their Metropolitan Areas*.

Prepared for the U.S. Conference of Mayors (undated), released June 2010.

locations is likely to involve redevelopment of existing developed sites. The secondary development or redevelopment and changes in land use under Alternative 90B, this alternative may produce greater indirect economic effects (increase in property values, increased business sales, increase in jobs) for the downtown areas served than would the Base/90A Alternatives.

4.24.3. Potential Mitigation Strategies

Since the cumulative impacts are anticipated to consist largely of beneficial economic impacts, with limited adverse environmental impacts, due to the already highly developed and urbanized nature of existing station sites, mitigation may not be required. Mitigation strategies during Tier 2 could include consultation with local and regional planning officials regarding local plans and zoning and discussing status of implementation strategies to support Transit Oriented Development (TOD). In the Tier 2 assessment, further research to be performed in the vicinity of station sites could include zoning and the extent of planning to support TOD in the vicinity of station sites. The final siting of stations, including the potential to relocate some stations to sites with more potential for positive secondary development impacts, could consider these factors to further economic development and consistency with regional and local plans.

4.24.4. Future Analysis

The existing land uses and zoning in the vicinity of station sites and consistency with Master Plans will be identified in the vicinity of existing and proposed station improvements. Regional and local planning officials will be consulted regarding station plans, and the secondary development potential of the program will be reevaluated in the context of current market forces and existing/proposed developments and land uses in the vicinity of the stations.

4.25. Construction

The Build Alternatives for the proposed program would involve the construction of new rail infrastructure including sections of track, bridges and other aerial structures, station construction, as well as ancillary and support facilities across the Empire Corridor. This section summarizes what construction of the proposed program may entail and reviews the potential for adverse impacts and measures to avoid, minimize and/or mitigate them. Since the eight projects associated with the Base Alternative are completed, the Base Alternative is not presented in this section.

4.25.1. Methodology

Because this is a Tier 1 assessment, the methodology for determining construction impacts at this stage involves a qualitative conceptual approach. At this early stage of the program, construction plans, including staging areas, construction methods, and materials have not been developed, and the extent of impacts will depend on the methods used, which will not be determined until either final design or even construction. The exact methods may be determined as part of the contractor's means and methods during the construction period. Therefore, impacts will vary, depending on how specific projects are designed and constructed and the findings of any Tier 2 environmental studies, which may identify additional resources or potential impacts. For the Tier 1 analysis, a general overview of the potential construction techniques is identified, along with potential typical short-term impacts.

4.25.2. Construction Types

The program construction would involve the construction of several different elements of the rail infrastructure along the corridor. The general types of construction activities employed as part of the program include:

- At-grade trackwork
 - New tracks and special trackwork
 - Removing tracks, realigning, replacing existing track work
- New and upgraded highway/grade crossings
- Right-of-way fencing
- Creation of additional track right-of-way
 - Expanding embankments, retained fill or cut earthwork
- New Railroad bridges/structures
 - Replacement of existing bridges
 - Installation of foundations
 - Construction of concrete piers and abutments
 - New bridge superstructures
 - New grade separated bridge structures
 - Extensions to culverts
- Rehabilitation of existing Railroad Bridges
 - Strengthening or widening of existing piers and abutments
 - Replacement or widening of superstructures
- Station and Facility work
 - New/rehabilitation of existing station platforms
 - New trackwork/rehabilitation of existing trackwork
 - New and/or upgraded special trackwork for station access
- Signal work/Advanced Train Control
 - New wayside signal and fiber-optic underground cables and conduits
 - New and/or replaced wayside signals
 - Modifications to Positive Train Control system
- Yard/Maintenance facilities
 - Construction of new yard tracks
 - Replacement of special trackwork

The construction of the program may require temporary use of other parcels of land for staging and storage of construction equipment and materials, if the available right-of-way is not sufficient. During final design, the need for temporary construction easements on other properties would be determined, and required permits or approvals would be identified.

4.25.3. Environmental Consequences

Although the precise extent and locations of the different construction types are not yet known in Tier 1 assessment, the following section reviews the types of impacts that can occur from these construction activities. The various alternatives are compared programmatically to determine the relative magnitude of each, with specific impacts identified as applicable to the Preferred Alternative.

Comparison of Alternatives

A comparison of construction impacts related to each resource or parameter studied in this Tier 1 Final EIS can be found in Exhibit 4-44. For many of the resources and parameters discussed, the degree and extent of short term construction impacts would be proportional to the amount of new construction located outside of the existing right-of-way. For example, construction activities on undisturbed locations have a greater potential for natural resource impacts, including the potential use of timber for clearing and subsurface excavation. Given the location of the program alongside or within the existing railroad rights-of-way or previously disturbed areas, and the relatively shallow depths of excavation required for the railroad and its embankment, it is unlikely that the program would affect mineral resources.

Earthwork during construction can create many short-term environmental impacts. These impacts include erosion and sediment transport effecting water quality or terrestrial or aquatic habitats, changes to stormwater routing, potential exposure to contaminated soil and/or groundwater, airborne dust particles, and visual impacts. Alternative 90A would involve the least amount of earthwork during construction and would involve work within the right-of-way. Trackwork for the Preferred Alternative, 90B, would largely be sited within the existing rail right-of-way and would be placed using rail-mounted equipment, which would not involve large quantities of earthwork. Compared to these alternatives, Alternative 110 would involve greater clearing and earthwork, due to the addition of rail outside the existing right-of-way. Earthwork may be involved for all alternatives for station construction, addition of third and fourth track rail embankments, extension of culverts, construction of elevated structures and flyovers, bridgework, and maintenance of access roads. Earthwork would also be needed for clearing and other more intensive activities for foundations and civil work. Due to construction of an exclusive new right-of-way to be built over 280 miles from Albany to Buffalo, Alternative 125 would require the greatest level of construction activity with the largest potential to impact the environment, affecting an estimated two to three thousand acres of land.

For Alternatives 90A, 90B and 110, significant work would take place within the existing right-of-way. This online construction would present both challenges and opportunities. With Alternatives 90B and 110, the location of the new passenger tracks generally on the north side in the location of the former passenger tracks would allow existing rail operations to be maintained, while construction of the new tracks is proceeding. Another advantage is that the existing rail network could be used to deliver materials and equipment and remove excavated materials and construction debris. An important pre-construction task would be to identify, locate, and protect existing railroad systems to avoid construction-related disruptions to vital signal and communications systems.

Construction activities would be carefully staged and scheduled to minimize impacts to the operations of freight and passenger trains. Flagging personnel from the operating railroad would be required to protect rail service and ensure the safety of rail operations, construction personnel and the public. As construction proceeds in a linear fashion along the right-of-way, impacts to adjacent communities and landowners can be expected to be transitory in duration. Installation of new subgrade, ballast, track, and final surfacing would likely occur in a series of passes of specific construction activities resulting in short, but repeated, impacts to any adjoining abutters. The use of construction equipment and supporting work trains would result in noise and in the case of night-time activities, temporary lighting. As construction would pass over highway/grade crossings or would upgrade the crossings, highway vehicle traffic would be temporarily obstructed resulting in delays and potential detours.

Exhibit 4-44—Alternatives Comparison of Construction Impacts

Resource	Potential Construction Impacts by Alternative				
	Base	90A	90B	110	125
Land Use	Impacts from short-term easements commensurate with permanent land use impacts				
Population and Employment	Short-term construction employment proportional to capital expenditure				
Environmental Justice/Title VI	Unlikely to result in disproportional impacts to EJ communities			Higher potential impacts	Greatest potential for impacts
Community and Public Facilities	Proximity impacts during construction proportional to length of construction				
Surface Waterbodies and Watercourses	Least construction work in and around water resources	Low construction work in and around water resources	Moderate construction in and around water resources	Moderate construction in/near water resources, with slightly greater impacts than 90B.	Significant construction in and around water resources
Navigable Waters	Minimal impacts	Short term impacts to 2-5 existing crossings	Short term impacts at up to 15 existing crossings	Short term impacts at up to 15 crossings, increased impact with track built 15 feet further out than 90B	Short term impacts at 4 new crossings
Floodplains	Short term impacts are unlikely as permits will likely require that no equipment or material is stored in the floodplain; however, temporary works may increase flood potential or could cause damage in the event of a flood event.				
Aquifers	Short term impacts commensurate with amount of subsurface work.				
General Ecology and Wildlife Resources	Short-term impacts from temporary disturbance, noise, short-term loss of habitat proportional to capital expenditure.				
Historic and Cultural Resources	Least potential impacts	Low potential impacts	Greatest potential for adverse impacts on known resources		Moderate impacts-on known resources. Greater potential for unidentified sites
Parks and Recreation Areas	Short-term impacts to users of adjacent facilities from construction activities proportional to capital expenditure				
Visual Resources	Short-term impacts commensurate with construction but would depend upon local site-specific existing visual resources along the Empire Corridor				Potential for substantial short-term impacts
Farmlands	Minimal impacts to actively farmed areas and little or no impacts to active farms outside of the right-of-way			Isolated short-term impacts to one or more active farmlands	Involve substantially greater short-term impacts to farmland
Air Quality	Potential impacts are proportional to capital expenditure and construction timeline due to potential increase in temporary pollutant emissions over a longer duration				
Energy and Climate Change	Potential energy required for construction is proportional to capital cost				
Noise and Vibration	Potential impacts are proportional to capital cost with the higher cost alternatives requiring more extensive heavy construction. However, site-specific conditions such as surrounding land use would ultimately determine the level of temporary impact				
Contaminated and Hazardous Materials	Risk of encountering contaminated materials commensurate with capital cost, due to work within potentially contaminated right-of-way, increase in subsurface work, and work in highly developed urban areas				Lower risk of encountering contaminated sites, but increase in subsurface work
Traffic/Transportation	Least potential for temporary impacts	Low potential for temporary impacts	High potential for temporary impacts	Highest potential for temporary impacts	Moderate potential for temporary impacts

In the case of fixed facilities such as bridges, interlockings, stations and yards, construction activities may require months or years for completion. Each of these specific construction activities would require detailed staging plans to ensure that the adjacent rail facilities and communities are minimally impacted, and that construction can efficiently progress. Special rail operating schedules may be required to safely and effectively operate passenger and freight trains through or around construction. In the case of passenger stations, particular attention must be paid to the safe passage of passengers through the construction area.

Construction of the 125 Alternative would reduce the potential construction-related impacts to the operating rail system, since the majority of construction would be on a new rail right-of-way. Connection to the existing rail system at Albany, Syracuse, Rochester, and Buffalo, as well as construction of flyovers, would have extended, but temporary impacts to the rail system, as described above in the discussion on fixed facility construction. On the new portions of the right-of-way remote from the existing Empire Corridor, construction would be able to proceed without delays associated with rail traffic. This fact will increase productivity as the contractors will be able to fully expedite the use of labor, machinery, and materials without restrictions. However, because work will take place along a new right-of-way, there is the greatest potential for adverse short-term impacts from construction to the surrounding environment, including residential or commercial properties, water resources, farmland, wildlife, and natural resources such as minerals and timber.

Alternative 90B (Preferred Alternative)

The potential construction impacts of Alternative 90B, the Preferred Alternative, are summarized below.

- **Land Use:** Easements and temporary use of private or public property outside of the railroad right-of-way may be required for construction activities, including storage of materials and equipment, access to construction areas, and other construction-related activities.
- **Regional Population and Employment** There would be beneficial effects related to new employment opportunities associated with construction activities and positive fiscal impacts. The location of the program almost entirely within the right-of-way would minimize the potential for business or neighborhood impacts. However, there could be potential for adverse effects to some businesses, if property or other impacts, such as temporary loss of parking or difficulty accessing businesses caused by roadway and sidewalk closures, were to occur.
- **Environmental Justice and Title VI:** Potential for transportation and environmental impacts to both Environmental Justice (EJ) and non-EJ populations could include adverse temporary effects, as discussed in Section 4.4, and would be considered EJ impacts only if they disproportionately affected EJ populations. Evaluations of disproportionality would be undertaken as part of Tier 2 evaluations.
- **Community and Public Facilities:** The potential effects on community facilities include access that may be interrupted by temporary traffic pattern changes associated with construction. However, there are very few community facilities directly adjacent to the proposed work, and no direct impacts have been identified in this Tier 1 assessment. Potential short-term noise and vibration impacts would be possible where construction activities are near sensitive uses such as schools, healthcare and eldercare facilities, house of worship, etc.
- **Surface Waterbodies and Watercourses:** Although there are a number of waterways that cross the existing Empire Corridor, where existing culverts and bridges for the existing railroad embankment are wide enough, there may be minimal disturbances to crossing waterways during construction. However, new construction of bridges and culverts, or modifications/extensions

of existing crossings, or the expansion of railroad embankment itself could involve work that could affect crossing or nearby waterways and stream crossings. Potential construction impacts could include stream discharge that may be altered due to silt loading, increased siltation downstream of stream crossings, and increased potential for toxic substance release from construction vehicles or equipment.

- **Wild, Scenic, and Recreational Rivers:** For any construction occurring along a Nationwide Rivers Inventory river, construction may cause temporary impacts to physical and visual access. The Black Creek (potentially eligible for listing as a National Wild and Scenic River) crosses the Empire Corridor at MP 386, near the location of 11 miles of proposed third track.
- **Navigable Waters:** Where the existing bridge crossings are wide enough, there may not be the need for additional bridgework at navigable waterway crossings. Impacts to navigation and marine users could result from construction of bridge piers and abutments, as well as temporary placement of fill or riprap, and surrounding turbidity curtains/cofferdams. Temporary impacts may include the erection of staging facilities and use of construction barges and other work boats during construction to provide access for pier construction staging or placement of spans.
- **Floodplains:** Construction equipment would not be permitted to be stored in the floodplain. Temporary construction facilities, such as construction platforms and barges within waterways, where located within a floodway, could cause temporary elevated flood elevations, depending on the extent of the construction facilities and the severity of a flood event. Construction equipment would not be permitted to be stored in the floodplain to the extent practicable.
- **Wetlands:** Potential for short-term impacts on wetland resources include the placement of fill material in designated wetland areas that may cause soil erosion, sedimentation, or increased risk of contamination associated with presence of heavy equipment. Wetland impacts may also include the removal of vegetation from areas that would be later regraded and reseeded, temporary loss of aquatic habitat, erosion and sedimentation, and disturbance and displacement of wildlife during construction.
- **Coastal Resources:** Along Empire Corridor South, the railroad transects the coastal zone along the Hudson River, a designated coastal waterway, which is the area with the greatest potential for coastal impacts. The Empire Corridor crosses through 11 Significant Coastal Fish and Wildlife Habitats (SCFWHs) and 6 Scenic Areas of Statewide Significance (SASSs) in this area. For the Preferred Alternative 90B, proposed work within or adjoining these SCFWHs and SASSs along this corridor will not involve substantial impacts outside of the right-of-way and will not result in appreciable changes in visual quality, and no impacts to the scenic qualities of the SASSs are anticipated. The Preferred Alternative will involve bridgework in coastal areas for the Livingston Avenue Bridge and modifying or constructing a new bridge over the Irondequoit Creek, another designated coastal waterway, and its associated SCFWH. This work would be temporary in nature and would span these coastal waters.
- **Aquifers:** Proposed structures that would require substantial excavation, deep foundation or dewatering, such as new stations, platform extensions and bridge construction, could impact groundwater. Any construction-related action that may release contaminants can affect underlying aquifers and potentially impact drinking water supplies.
- **General Ecology and Wildlife Resources including CEAs:** The location of the majority of the work within the right-of-way or within previously disturbed areas would minimize the potential construction impacts to wildlife, including the elimination and/or fragmentation of forested habitat. Depending on proximity to aquatic and wildlife habitats, construction noise and construction staging areas may effect or displace some wildlife. Effects to EFH could include

habitat disturbance, and, without protections in place, spawning could be affected by in-water construction work.

- **Historic and Cultural Resources:** Most of the work will occur within the existing right-of-way or within previously disturbed areas, which will minimize the potential for historic or archaeological impacts. The cultural resource inventory captured resources extending within the entire APE (but outside the construction zone in many instances). Where work will occur proximal to historic resources, construction could potentially damage or alter cultural resources and historic properties. Without adequate controls in place, fragile historic buildings and structures could be damaged by activities (e.g., pile driving) that cause high vibration levels. On the surface or belowground, archaeological sites could be damaged or disturbed by grading activities and excavation of undisturbed, natural soils for cuts, foundations for bridges and viaducts, and foundations for ancillary facilities.
- **Parks and Recreational Areas:** Where construction would occur near or adjacent to public open space and parklands, temporary impacts, such as increased noise and reduced access may adversely affect users of the facility. However, there are limited occurrences of work near parks, including existing canal crossings, and at most or all of these, direct impacts are not anticipated at the park/trail properties. The proposed construction includes adding tracks at two crossings over the Erie Canal, including adding trackwork over the Mohawk River/Erie Canal on an existing bridge and adding tracks around Rochester Station that would also cross the Erie Canal and Erie Canalway Heritage Trail. At these and other locations, this work is not anticipated to directly affect the parklands under these bridges. Work would also occur near a riverfront park and underpassing bike trail, but direct impacts to these recreational uses are not anticipated. The potential for impacts at the canal crossings from construction activities will be evaluated in the Tier 2 assessments.
- **Visual Resources:** Visual impacts could include the temporary presence and movement of construction machinery, equipment, building materials, construction access ways, construction cranes, fences, and screens, but only in areas where there are views of the site and receptors close to the construction site.
- **Farmlands:** If construction requires easements for construction access and laydown areas on agricultural property, this could affect the temporary use of and access to agricultural lands. In this case, there would be potential for erosion, sedimentation, and stormwater runoff. Fugitive dust from construction activities may affect farmland functions temporarily. Removal of or damage to vegetation (e.g., trees, shrubs, grass, etc.) during construction can create longer term impacts to nearby farmland.
- **Air Quality:** Fugitive dust emissions from land clearing and grading operations could occur from excavation, hauling, dumping, spreading, grading, compaction, wind erosion, and traffic over unpaved areas. Mobile source emissions from construction could occur because of operation of heavy-duty diesel and gasoline-powered construction equipment and operation of heavy-duty diesel trucks, and possibly locomotives involved in transporting excavated material and delivering construction materials. Disruption to traffic during construction, such as reduction in roadway capacity and increased queue lengths, could result in short-term elevated concentrations of localized pollutants such as carbon monoxide and particulate matter.
- **Energy and Climate Change:** Potential short-term impacts include direct greenhouse gas emissions from on-site activity during construction. Potential indirect impacts include greenhouse gas production from the extraction, manufacturing, and transport of materials used for construction. The energy expenditures during construction would be substantial and would, to some extent, offset future long-term energy savings and program benefits.

- **Noise and Vibration:** Most of the trackwork would be contained within an active railroad corridor, which currently experiences heavy freight use (CSXT on Empire Corridor West) and commuter rail traffic (Metro-North on Empire Corridor South). Increased noise and vibration from the construction activities may adversely impact sensitive uses during the day and residences at night, although this is an active rail corridor. Construction activities that can be vibration generators include bridgework, foundation work, station/platform construction, retaining wall, and sheet pile construction. Vibration nuisance can occur from pile driving, demolition, rock removal, pavement breaking, and the use of heavy construction vehicles and equipment. In most cases, the construction is anticipated to be far enough away from buildings, that the potential for building damage would be very low. Building damage can occur from construction-related vibration, potentially resulting in structural damage.
- **Contaminated and Hazardous Materials:** Soil disturbance, including excavation, could encounter contaminated soil and/or groundwater. Demolition activities could encounter lead-based paint and asbestos-containing materials as well as PCB containing oils.
- **Traffic and Safety:** Construction activities that impedes access or use of active rail lines could result in potential delays for users of the rail right-of-way. However, the location of the majority of the tracks on the north side (in the location of former tracks) will minimize disruption to active railroad operations. Potential impacts include roadway relocations or diversions during construction in some areas. Construction could affect vehicular operations from lane closures, roadway closures, detours, and disruption of general roadway operations during peak and nonpeak times. Potential impacts to transit stations include loss of or decrease in parking areas and loading zones from construction activities or staging if they extend into the station area. Temporary limitations to vehicular and pedestrian access may occur in certain areas to address public safety and to accommodate the construction activities.

4.25.4. Potential Mitigation Strategies

The construction mitigation will depend on the degree of impacts associated with the Preferred Alternative, Alternative 90B, which will be determined during Tier 2 assessments. At this stage, general construction mitigation strategies have been identified to avoid, minimize, and/or mitigate potential adverse impacts.

It is anticipated that, to the extent possible, and taking into consideration night-time construction noise concerns in residential areas, work will be staged during night-time, weekends, or off-peak hours to minimize service outages and disruptions to the traveling public. However, near residential areas, this will need to be examined and balanced with measures to minimize temporary noise impacts on local residents. Any interruptions in service will be closely coordinated with the affected transportation agencies and freight companies and users and the traveling public and advertised as appropriate.

The following lists potential measures that could be used during construction to avoid, minimize or mitigate the possible temporary adverse impacts outlined above:

- **Land Use:** Local outreach plans will be developed, temporary relocation assistance offered, and compensation provided to affected property owners, as appropriate. For areas used for construction staging, consultation will be performed with affected property owners to provide adequate compensation and minimize property impacts.
- **Regional Population and Employment:** Efforts will be made to avoid impacts on, and prevent construction from affecting, businesses and residential neighborhoods, whether through traffic

disruptions or property impacts. Short-term construction mitigation measures can include outreach to affected communities regarding potential traffic disruptions and compensation to affected property owners for use of affected property. Mitigation will be achieved by providing alternative access or providing temporary relocation services to affected residences and businesses, where applicable.

- **Environmental Justice and Title VI:** Tier 2 analysis will examine in greater detail if any construction impacts are located within an environmental justice population. If necessary, mitigation efforts would include targeted public outreach to affected communities and implementing additional measures, such as noise mitigation and dust controls, to avoid, minimize, or mitigate any adverse effects.
- **Community and Public Facilities:** Tier 2 analysis will determine potential community impacts and determine minimization strategies, as appropriate. Mitigation may include minimizing noise and vibration impacts on adjoining community facilities and coordination on the plans for the construction schedule and activities.
- **Surface Waterbodies and Watercourses:**
 - During construction, stormwater controls will be used, and either an Erosion and Sediment Control Plan (for sites disturbing less than an acre) or a Stormwater Pollution Prevention Plan (for sites disturbing an acre or more of land) will be implemented.
 - Implementing stormwater treatment or detention/retention facilities, as appropriate for the construction site, including drainage channels/facilities to improve stormwater management and water quality, and minimizing damage by debris, sedimentation, and other materials, would mitigate surface water impacts.
 - Temporary construction BMPs, such as seed, mulch, embankment protectors, grade techniques, inlet protection, silt fences, development of a Spill Prevention Control Plan (SPCC), Stormwater Management Plans (SWMPs) and vehicle tracking prevention will be used as appropriate.
 - For work within waterways, the program will implement temporary construction measures, such as cofferdams, turbidity curtains, etc., to prevent and control silt, debris and other materials from being carried into receiving waters.
- **Wild, Scenic, and Recreational Rivers:** For construction near or over Nationwide Rivers Inventory rivers, the program shall maintain physical access to the river, wherever possible, and implement measures to minimize visual impacts (such as use of temporary screens/fencing).
- **Navigable Waters:**
 - To mitigate impacts to navigable waters, coordination with the U.S. Coast Guard will be performed to identify any potentially affected navigational users and the frequency/timing/season for this navigation. An effort will be made to maintain navigable passage, as required, for local users and identify measures to minimize encroachments and disruptions to navigation during the construction period.
 - In-water work shall be limited or phased where possible to limit the area of navigable waters affected at any one time.
 - Safety measures to protect marine users will be implemented, such as notifications through the U.S. Coast Guard, installation of lighting on barges and the cofferdam, and use of automatic identification system transponders affixed to barges and cofferdams to enable electronic locating and tracking.

- Temporary protection of existing underwater utilities will be implemented, as appropriate.
- **Floodplains:** To mitigate floodplain impacts, hydraulic analysis will be performed, if appropriate, to demonstrate effects of the construction staging facilities on hydraulic openings/floodways, and, if needed, equipment and materials will be stored outside of floodplain areas to the extent practicable. Equipment and materials that have the potential to release pollutants (such as fuels and hazardous materials) will be stored outside of floodprone areas, to prevent potential release of contaminants during storm events.
- **Wetlands:**
 - The use of features such as retaining walls and steeper slopes would help avoid encroachment into adjacent wetlands or wetland buffers.
 - Flagging the edges of protected wetland resource areas prior to the start of construction would facilitate avoidance of work extending into these areas.
 - The program shall, to the extent practicable, avoid or minimize disturbances to waterways and wetland resource areas and restore any temporarily impacted areas.
 - The program shall employ temporary construction measures, such as time-of-year fisheries restrictions for protected species for in-water work.
- **Coastal Resources:**
 - During construction, appropriate permits would be obtained from NYSDEC for specific activities in coastal resource areas, and all permit conditions will be adhered to in the design and construction documents.
 - Protection measures could include preparation of a Coastal Consistency Determination, as required, and implementation of a construction environmental compliance plan that protects man-made and natural resources of the specific coastal area in coordination with the Local Waterfront Revitalization Program/Plan and New York Department of State.
- **Aquifers:**
 - During construction, appropriate controls, such as a Spill Prevention Plan, would be used to prevent any release of material that could adversely affect groundwater resources and to identify measures that would provide for proper containment and disposal of oil and hazardous substances.
 - For locations where subsurface work is proposed (e.g., foundations, retaining walls, piles, etc.) in areas of contaminated soil and/or groundwater, a remedial action and waste management plan will be provided, as appropriate, to prevent migration of contaminated groundwater to adjacent aquifers.
- **General Ecology and Wildlife Resources including CEAs:** As required or appropriate, the construction activities will be timed to avoid bird nesting or seasonal ecological processes. Temporary safe wildlife crossings and fencing could be constructed to prevent disturbances to protected habitats and maintain wildlife corridors, as appropriate. The construction activities will be scheduled to comply with timing restrictions for in-water work to protect endangered and threatened species, or could employ less noisy construction techniques, in compliance with any permit stipulations. In protected habitats, additional mitigation could include training of workers to facilitate sightings and protection of rare species. Clearing of trees and other vegetation will be minimized, if critical to habitat for protected species, and flagging or field identification of protected terrestrial species on site could be performed, if appropriate.

- **Historic and Cultural Resources:** If appropriate, the program will prepare a Construction Protection Plan (CPP). If required during construction, geoarchaeological surveys, documentation, and data recovery will be performed. Potentially affected and eligible historic structures will be protected, and, if required, mitigation, such as vibration monitoring will be performed to prevent building damage. If appropriate, in the vicinity of historic resources, vegetation can be planted to enhance visual quality, and noise barriers installed for protection.
- **Parks and Recreational Areas:** Direct impacts to parks, such as use for construction staging and storage, and indirect impacts, such as noise, will be avoided and minimized to the extent possible. The construction activities will be staged to minimize disruptions to, or avoid complete closures of, trail connections, and if required, plans to implement detours or partial closures would be developed, as appropriate. An effort will be made in developing construction plans and identifying staging/storage areas to maintain trail or park access during construction, to the extent practicable.
- **Visual Resources:** Temporary screens/fencing could be installed around active construction sites to minimize visual impacts in heavily trafficked or populated areas. Construction staging, fencing, and materials will be kept neat in appearance, clean and orderly. Construction sites will be restored in a timely fashion. The program will employ directional lighting at night to protect residences from light pollution. If appropriate, the construction will be performed during seasons/times of year that would be less impactful for tourists or visual resources accessed by the public.
- **Farmlands:** Potential mitigation measures for work affecting agricultural properties include installation of crossings for farm animals or creation of new temporary farmland access roads, if the proposed work may impinge on these uses. Where impacts occur to current irrigation systems, these systems will be reconfigured. Construction activities near farmlands could be timed to occur at the end of harvest.
- **Air Quality:** Dust control measures, such as use of water sprays, in accordance with state requirements, will be implemented. Installation of a stabilized construction entrance and cleaning of tires will be performed of construction trucks prior to leaving the construction site to prevent tracking of dirt on local roads. Land and soil disturbance will be minimized, and disturbed areas will be stabilized within required timeframes to prevent dust emissions/erosion. Construction trucks will be covered when hauling soil, stone and debris.

Best Management Practices may include the use of newer U.S. EPA certified Tier 4 construction equipment, diesel particulate filters, or similar emission control technology. The use of ultra-low sulfur diesel fuel or electric equipment may further reduce GHG emissions. Restrictions will be implemented for idling construction equipment to five minutes or less.

- **Energy and Climate Change:** Mitigation efforts will include a shift to solar, green energy, energy efficient and electric sources of power for construction activities, such as message boards, signage, lighting, etc., to the extent feasible. A shift to biodiesel fuel for construction engines will further reduce construction emissions. Local, renewable, recycled materials for construction materials may be used, when possible.
- **Noise and Vibration:**
 - Noise and vibration emanating from construction vehicles and equipment will be limited through vehicle and equipment noise specifications, mufflers and operational restrictions.
 - Temporary sound barriers and use of buffer zones are other potential means of attenuating temporary noise from construction activities that could be implemented, if appropriate.

- The potential construction impacts from vibration could be limited by establishing applicable criteria in the program construction contract specifications, through the use of vibration monitoring during construction, and pre-construction surveys of potentially affected buildings, as appropriate. Plans for compliance with applicable standards could also be incorporated into the construction contract specifications.
- If appropriate, near noise-sensitive areas, program specifications could develop standards for noise emissions during construction and construction noise monitoring could be performed, and compliance plans developed. When practicable, construction activities near residential communities will be performed during daytime and weekday hours, and construction near schools and community facilities will be performed at night.
- **Contaminated and Hazardous Materials:** Mitigation efforts could include creating site-specific plans to address soil and groundwater contamination, preparing a Spill Prevention Control Plan (SPCC), Asbestos Abatement Plan and Lead-Based Paint Assessment Plan. As required, the program will perform Phase 2 subsurface site investigation where necessary to determine extent of subsurface ground contamination. Site-specific Construction Health and Safety Plans (CHASP) to protect workers, local community, and the general public will be developed and implemented.
- **Traffic and Safety**
 - Staging and phasing will be coordinated so that new track and crossovers are installed off-peak and cutover prior to removals/realignment of existing track. Outages will be coordinated with CSXT to limit impact to daily operations. Preferences will be scheduled to piggyback on adjacent outages required for annual maintenance and State of Good Repair work.
 - To mitigate traffic impacts, the construction work affecting area roadways or railroads could be staged during night-time, weekends, or off-peak hours to minimize service outages and disruptions to the traveling public. Interruptions in service would be closely coordinated with affected transportation and freight agencies.
 - A Maintenance and Protection of Traffic Plan would be created and communicated, if required to address construction traffic on area roadways.
 - The program would create adequate signage and fencing and will provide advanced notice to local officials and communities impacted.
 - Construction security and safety will be enhanced through clean and orderly sites, including fenced off staging areas and properly stored construction materials.
 - Satellite parking could be provided for construction workers and construction deliveries scheduled outside of school and commuter peak hours where possible to avoid adverse effects.
 - Mitigation efforts include coordination with emergency service providers to minimize impacts and disruptions to emergency service routes near construction sites and developing strategies to provide station access and pedestrian accommodations to affected communities, such as connections to existing transit and highways.

4.25.5. Future Analysis

Future analysis will be conducted in Tier 2 environmental documents where additional design data, more detailed designs, and site-specific conditions will allow a more refined analysis and additional insight into potential construction impacts. Based on these results of these analyses, specific

measures will be identified to avoid, minimize and/or mitigate potential adverse impacts.

5. Financial Capacity

5.1. Introduction

State and local governments typically support transportation infrastructure and services by a combination of capital and operating funding from various sources. These funding sources may have conditions and restrictions as to how they may be applied to New York's HSIPR program, and these restrictions can have significant implications for the affordability and the feasibility of the High Speed Rail Empire Corridor Program's alternatives. Matching the particular requirements and restrictions among federal, state, municipal and private funding sources with the costs of each alternative helps determine the time frame over which the alternative could be implemented.

In general, public transit agencies build, equip, and maintain their public transportation systems using capital funding from various sources, and operate day-to-day using operating funds derived from fare and advertising revenues and some form of government subsidy. These categories of funding – and the sources for these funds – are described in Sections 5.3 and 5.4.

Chapter 5 describes the costs, ridership and ticket revenues, subsidy requirements, and sources of funding support that are available to advance the High Speed Rail Empire Corridor Program. The Service Development Plan includes detailed operating plans as well as a capital program for the Preferred Alternative that includes costs and projected fiscal construction years. This chapter presents information that has been incorporated into the Service Development Plan. Appendix B presents additional information on how the ridership forecasts were developed, and Appendix F presents additional information on how cost estimates were developed.

5.2. Cost and Revenue Methodology

NYSDOT based the capital and operating costs and operating revenues anticipated for each alternative on ridership forecasts and consistent costing methods, to ensure comparability. Based on proposed operating plans (service frequency and trip time) for each alternative, analysts forecast ridership and generated operating costs. The analysis defined rolling stock requirements, track alignments, catenary requirements (Alternative 125), and railroad signal system configurations in detail sufficient to permit reasonable capital construction cost estimates, and to establish the feasibility of proposed train operating plans, service frequencies, stopping patterns, and express/local/regional service overlays. The Tier 1 Draft EIS presented cost data in 2015 dollars, which were current at that time. This Tier 1 Final EIS expresses costs in 2017 dollars. Analysts developed the costs by applying appropriate measures of inflation for labor, materials, heavy industry, and construction, between 2015 (the date of the original analysis) and 2017 (the date of the most current analysis).

Standard practice for quantifying and comparing costs of different investment programs that transpire over different time frames involves scheduling all the future improvements based on the likely time of their implementation. The current cost of each element is then inflated to its anticipated implementation year based on appropriate inflation factors for the construction and heavy equipment industries (averaging 3.5%/year 2004-2017). These future costs are then discounted back to the target comparison year using net present value (NPV) analysis techniques so that they are comparable in constant-dollar terms. For example, if a locomotive is to be purchased in 2020, but the target comparison year is 2017, the 2020 cost of a locomotive used in the analysis would be inflated to 2020 at 3.5%/year and the resulting value discounted back to 2017 using an appropriate

discount rate. Discount rates address a combination of inflation and the “opportunity cost” of using the funding for the subject project rather than for some other purpose (which might give greater or lesser returns). Discount rates typically range between 6 percent and 10 percent, depending on a variety of factors. Following this procedure enables the comparison in a specific analysis year (in the above case, 2017) of various future investments with varying future implementation dates. Projected investments of the Empire Corridor Program would span the time period from 2015 to 2035.

For a Tier 1 analysis, the cost and timing for the specific investments are estimated, since actual implementation dates will depend on the availability of future funding and other factors. Therefore, this Tier 1 analysis is focused on the year 2017 as the point for comparison among the Build Alternatives. The recent costs of elements used in this analysis (2012 for some elements; 2011 for others), such as track, coaches, locomotives, bridge construction, etc., are inflated to the likely cost of purchase and installation at the estimated future implementation year, using an annual inflation rate of 3.5 percent. These costs are then discounted back to 2017 for comparison. While the exact costs or future year of implementation are not precisely known for each alternative, the common treatment of all cost elements across all categories as if occurring in 2017, allows reasonable comparisons among the Build Alternatives.

5.2.1. Capital Cost Estimating Methodology

Capital cost estimates for the alternatives used industry standards for all major components. Infrastructure capital costs were determined on a unit basis. Construction costs for each alternative were derived by multiplying the quantity of each major item by the unit cost for that item, based on standard values or recent costs, with appropriate regional adjustments applied as necessary. Land costs were developed for urban, suburban and rural property. Train and maintenance staffing costs were based on recent Amtrak values projected to the target analysis year. Use of these common factors allows meaningful comparisons among the alternatives in terms of their likely future ridership potential and their capital and operating costs and revenues.

Rolling Stock

The method by which costs for rolling stock were developed is described in Appendix F. In brief, equipment costs are a function of the operating plan intended for each alternative. This includes the number of train sets to be operated along the route and the number of locomotives and passenger coaches that will be needed for each alternative, including spare trains to substitute for trains scheduled for maintenance.

Track and Infrastructure

Track and railroad signal system installation costs were based on standard unit values used throughout the railroad industry, appropriate to the Northeast. Track installation costs are typically recognized on a cost-per-mile basis. Infrastructure costs, for bridges, culverts, grade separations, and retaining walls involved gross cost estimates based on recent experience. Bridge costs were estimated based on length of span and width, culvert costs were estimated based on diameter and length under the ROW, and retaining wall costs were estimated based on the volume of concrete required.

Overhead Catenary Infrastructure

For overhead catenary system, a per-mile installation cost was used. Catenary system costs also include the cost of providing an electric power source, substations on a one per-twenty-five-mile unit

of length of the corridor, and associated support equipment.

Signals

Since railroad signal systems must be linked via cable along the ROW to communicate with trains and the various interlockings and crossovers, a per-mile installation cost was used. Railroad signal system costs include electric power for railroad signals, control houses, and switches, associated support equipment such as snow melters, and component installation.

Maintenance Facilities

Maintenance and repair shops were estimated on a cost-per-square-foot basis for industrial or commercial buildings (depending upon scale), adjusted for the additional costs for structural support sufficient to house heavy locomotives, and for the cost of typical rail maintenance equipment (cranes, tables, lifts, etc.) that must be used to fit out such facilities.

Stations

Station costs were estimated on the basis of approximate square footage, at typical northeast commercial construction cost values. At this Tier 1 level of analysis, all alternatives were assumed to require the same station improvements and used identical costs for this element.

Property Acquisition

Both Alternatives 110 and 125 would involve more substantial property acquisitions, with the greatest number of acquisitions required for Alternative 125.¹⁴⁷ Alternative 90B also involves property acquisition on a much reduced scale than what is required for the additional track and right-of-way to be constructed as part of the higher speed alternatives. Alternative 110 would require additional land to augment the existing ROW on the south side for an extra track. Alternative 125 would require property acquisition for a new ROW at some distance from the existing alignment.

Since the exact position and routing of additional trackage necessary to improve curves to allow higher speed is not yet known for either alternative, it was difficult to estimate property acquisition costs for these higher speed alternatives. Property acquisition was therefore estimated based on apparent need to modify curves, add parallel main-line or passing tracks, install additional grade separations to meet safety requirements, or expand yards. Three indices of cost were then applied: prime city, suburban, and rural. Costs for each index were based on 2012 property values along the corridor. No correction has been made for inflation to 2017, as the real estate market was relatively flat over the previous five years, and future values cannot be reliably predicted on the basis of standard inflation drivers.

Upon completion of the Tier 1 process, and as the program moves into the next phase of work, more precise information will be developed, associated with the specific track, bridge, yard, station, and railroad signal system construction projects.

As set forth in the Agreements in Appendix J between CSXT and NYSDOT, CSXT is entitled to compensation for the use, acquisition, or diminishment in value of its property resulting from any project advanced as a result of the program. The development of the cost of alternatives will recognize this principle; however, negotiation of the actual value of any compensation to CSXT is not part of this Tier 1 EIS, but will be developed if and when necessary during detailed analysis (Tier 2).

¹⁴⁷ Alternative 90A does not require property acquisition.

5.2.2. Operating and Maintenance (O&M) Cost Estimating Methodology

Operating and maintenance (O&M) costs for Empire Corridor high-speed intercity rail services were based on unit costs for a variety of elements including but not limited to:

- Number of train crews needed to operate the prescribed number of trains – based on typical, industry standards;
- The number and size of train cleaning crews – based on hourly pay rate plus fringe and overhead costs;
- Track and railroad signal system maintenance costs – based on annualized cost/track-mile, an industry standard, adjusted by region;
- Propulsion costs – based on locomotive mileage standards (gallons/mile or gallons/hour) at pre-determined speeds, typical cost of fuel, projected to the target analysis year, based on accepted industry methods;
- Janitorial and landscaping services – estimate of annual contract values and number of locations;
- Dispatching functions for trains, personnel, equipment.

By applying industry standard costs for labor hours, fuels, maintenance tools and supplies, rents, and general custodial and cleaning contracts, an approximate operating cost could be estimated for each alternative. These costs were compared among the alternatives to better understand how the different elements of each alternative affect annual operating costs.

Estimates of future annual operating and maintenance (O&M) costs for the proposed passenger rail system improvements and for the existing system were based on Amtrak accounting conventions, developed in response to the state-supported service provisions of the Passenger Rail Investment and Improvement Act of 2008 (PRIIA). Costs were initially derived for 2015, the first year for which PRIIA-mandated state operating cost payments are required (see Section 2 of Appendix F; Exhibits F-1, F-3). These costs were then increased to account for the effects of inflation between 2015 and 2017, to permit their comparison with 2017 forecast revenues, and the derivation of 2017 subsidies for the alternatives. Annual operating expenses for the alternatives were based on a forecast of scheduled trains, train miles operated, per-train-mile O&M costs (for rolling stock), and per-track-mile infrastructure maintenance costs which generally increase due to greater wear rates associated with higher-speed operation. The methodologies by which operating costs were derived for the High Speed Rail Empire Corridor Program alternatives are detailed in Appendix F.

For all Build Alternatives except for Alternative 125, detailed operating plans require six additional train sets, each containing one diesel locomotive and five passenger coaches (including a 20 percent spare factor). Alternative 125 would involve electrification of the ROW west of Albany up to a proposed new Buffalo station, and its operating plan calls for 17 additional train sets, each containing one dual-mode locomotive and five coaches (including a 20 percent spare factor). Each alternative involves an operating schedule necessary to permit sufficient service to attract the forecast ridership, as described in Chapter 3. The proposed train schedules were proposed based on the following:

- The number of trains that could be accommodated on the corridor under the Base (No Action) Alternative and proposed higher-speed alternatives without creating unacceptable conflicts with freight operations;
- A level of service sufficient to produce the forecast ridership while also achieving the MAS and required average speed for each alternative.

5.2.3. Revenue Estimating Methodology

Annual ticket revenues are estimated based on ridership between station pairs multiplied by the Amtrak fare for travel between those pairs, assigned to the 2035 target year. This approach is consistent with the computation of the O&M costs for each alternative, which are also presented in 2017 dollars.

5.2.4. Deficit Estimating Methodology

Few public transportation services earn enough money in fare and non-fare revenue to cover their entire annual O&M cost. The operating deficits projected in this Tier 1 EIS are simply the difference between the estimated O&M costs and the estimated ticket revenues. Although ticket revenues are normally supplemented by lease, concession, rent, and advertising revenues (“non-ticket” revenues), these additional revenue streams are generally small compared with ticket revenues paid by passengers; ticket revenues alone are therefore sufficient to give a reasonable picture of the scale of the deficit for each alternative.

At the Tier 1 level of analysis, where increased train speed and shorter travel times would be the project benefits resulting in increased ridership, other factors that might influence travelers’ mode choices – such as higher or lower gasoline prices, tolls, air fares, bus fares, etc. – were held constant at their 2017 values and applied to the 2035 analysis year. By holding all 2017 cost relationships constant, the effect of speed and time on ridership can be observed alone, independent of any other factors.

5.3. Capital Funding Needs, Requirements and Sources

In the public transportation sector, where the majority of costs are funded by federal, state, and local governments, capital funding is defined as sources provided to agencies for the purchase of assets with significant useful life, generally greater than five years. Assets such as buildings, rail yards and track, railroad signal systems, bridges and culverts, real property, rolling stock, and long-life maintenance equipment (cranes, drop tables, turntables, wheel true installations, fork lifts, etc.), are generally considered to have useful lives in excess of five years, and are therefore purchased with capital funds.

As the costs of rail infrastructure and equipment are substantial, major capital improvements are undertaken by the host Class 1 railroads, federal agencies, states, and major municipalities (and occasionally other private sector participants, typically for location-specific improvements). Federal capital grants for passenger rail systems typically require a local match of a minimum of 10 percent to 20 percent of the value of the purchase, and sometimes more, with the amount depending upon the apparent public benefit of the project and other factors. To qualify for federal capital funding in accordance with federal grant requirements, a state or municipal sponsor – NYSDOT or the individual municipalities along the route in the case of the High Speed Rail Empire Corridor Program – must also contribute capital funds in partnership with the federal agency funding the improvement.

For the High Speed Rail Empire Corridor Program, it is expected that capital funds would be provided primarily by FRA, the Federal Transit Administration (FTA), and NYSDOT. Where station upgrades are incorporated into the project, municipal governments and regional transportation authorities would provide capital funds as well. Capital funds would be used for the following:

- Purchase of property and equipment, such as locomotives and passenger coaches, or “rolling stock;”
- Upgrade and construction of facilities, such as stations, maintenance facilities at rail yards, and rail yard expansions;
- Improvement or expansion of railway infrastructure, such as tracks, railroad signals, switches, and bridge structures;
- Acquisition of additional ROW, as required to add tracks, expand yards, or straighten curves for higher speed operation; and
- Repayment of debt service and/or lease payments on long-term equipment purchases or construction costs where private sector investors have participated on a lease or debt basis. (Lease payments used to retire debt for rail construction or rolling stock are typically funded as capital costs during the lease term.)

5.3.1. The Capital Plan

The primary source of high-speed rail funding is anticipated to be FRA, using PRIIA and successor authorizations. For projects to be eligible for FRA funds, they must be advanced through the grant process, as described in Section 5.3.2. Projects are included in the New York State Rail Plan, which outlines all of the state’s rail system needs for both passenger and freight service. NYSDOT also includes rail projects on its Statewide Transportation Improvement Program (STIP) for informational purposes. The STIP is a four-year forecast of capital needs across all federally-funded transportation services. The STIP is updated by NYSDOT every two years and includes projects intended to be implemented over the following five years. Where additional funding may be sought from FTA or other federal grant programs, a project must be included in the STIP.

5.3.2. Capital Funding Programs

High-Speed Rail Corridor Designations: The federal government first enacted laws and provided grant funding opportunities enabling states to invest in passenger rail service - particularly higher-speed operations – in the 1990s. Section 1010 of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA, P.L. 102-240) directed the U.S. Secretary of Transportation to designate not more than five “high-speed” corridors where trains operating at speeds of 90 mph could be reasonably expected. Under this program, the 463-mile Empire Corridor from New York City-to-Albany-to-Buffalo was designated by the U.S. Secretary of Transportation as a High-Speed Rail Corridor on October 20, 1992. In 1998, Section 1103(c) of the Transportation Equity Act for the 21st Century (TEA 21, P.L. 105-178) directed the U.S. Secretary of Transportation to designate six additional corridors named in the law or based on criteria described in the law, for a total of 11 corridors, of which the Empire Corridor remains one. Beyond these two enactments, the specific federal and New York State funding laws supporting national high-speed rail programs are described below.

Federal Capital Funding Programs

There have been several significant federal funding programs supporting intercity/high-speed

passenger rail beginning in 1992. Key federal legislation relevant to the development of high-speed passenger rail service on the Empire Corridor includes:

- The **Transportation Equity Act for the 21st Century (TEA-21) (PL 105-178, June 9, 1998)**, supplemented the nationwide list of five high-speed rail corridors authorized under the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) (PL 102-240, December 18, 1991).¹⁴⁸ TEA-21 authorized the Empire Corridor, from New York City to Albany to Buffalo, New York, as a high-speed rail corridor. ISTEA defined “high-speed rail corridors” as corridors where trains operating at speeds of 90 miles per hours (mph) could be reasonably expected.
- The **Passenger Rail Investment and Improvement Act of 2008 (PRIIA) (Division B, Title III of Public Law 110-432, 122 Stat. 4907, October 16, 2008)**, as the first passenger rail authorization since 1997, called for significant improvements in the nation’s intercity passenger rail, including the development of high-speed rail corridors. PRIIA authorized a high-speed grant program for FY 2009 through FY 2013 to improve intercity passenger rail service, operations, and facilities. PRIIA also directed the U.S. Secretary of Transportation to develop a long-range national rail plan that is consistent with approved state rail plans and the rail needs of the nation. This directive resulted in the publication of the *Preliminary National Rail Plan* in October 2009. PRIIA established three new competitive grant programs for funding intercity rail capital improvements:
 - **Intercity Passenger Rail Service Corridor Capital Assistance Program:** Section 301 of PRIIA established grants for capital improvements to benefit all types of intercity passenger rail service, including the capital costs of facilities, infrastructure, and equipment necessary to provide or improve intercity passenger rail transportation. Eligible applicants included states (including the District of Columbia), groups of states, interstate compacts, and public intercity passenger rail agencies.
 - **High-Speed Rail Corridor Development:** Similar to Section 301, Section 501 of PRIIA restricted eligibility for grants to the U.S. Department of Transportation (U.S. DOT) - designated high-speed rail corridors (including the Empire Corridor). Grants could be used for acquiring, constructing, or improving rail structures and equipment. High-speed rail was defined as passenger rail services that may reasonably be expected to reach speeds of at least 110 mph. Section 501 broadened Section 301 to include Amtrak as well.
 - **Congestion Grants:** Section 302 of PRIIA authorized grants to states or to Amtrak (in cooperation with states) for facilities, infrastructure, and equipment for high-priority rail corridor projects to reduce congestion or facilitate ridership growth in intercity rail passenger transportation.
- **FY 2008 Appropriations Act: Capital Assistance to States – Intercity Passenger Rail Service:** The FY 2008 U.S. Department of Transportation (U.S. DOT) Appropriations Act (P.L. 110-161) established a new pilot program for joint federal-state intercity passenger rail capital investment. Under this program, \$30 million in federal funding was made available to states on a competitive basis to fund up to 50 percent of the capital cost of improving intercity passenger rail service. Up to 10 percent of the \$30 million was available for rail corridor planning grants.
- The **American Recovery and Reinvestment Act (ARRA) of 2009 (PL 111-5) (February 17, 2009)** and the **Transportation, Housing and Urban Development and Related Agencies**

¹⁴⁸ The five high-speed rail corridors authorized under ISTEA were: the Midwest, providing 3 links from Chicago, IL to Detroit, MI and St. Louis, MO and Milwaukee, WI; Florida, linking Miami with Orlando and Tampa; California, linking San Diego and Los Angeles with the San Francisco Bay Area and Sacramento via the San Joaquin Valley; Southeast, connecting Charlotte, NC, Richmond, VA and Washington, D.C.; and Pacific Northwest, linking Eugene and Portland, OR with Seattle, WA and Vancouver, British Columbia, Canada.

Appropriations Act for 2010 (Division A of the Consolidated Appropriations Act, 2010 (PL 111-117)) appropriated a total of \$787 billion, including \$8 billion specifically for the grant programs established by PRIIA and \$1.3 billion for Amtrak capital grants, providing funding for the formation of the federal High-Speed Intercity Passenger Rail program (HSIPR). The Empire Corridor was one of the high-speed rail corridors to receive funding in 2009, 2010, and 2011. ARRA sought from states “shovel ready” transportation projects, among them programs and projects to advance high-speed rail. The appropriation references the authorities included in Sections 301, 302, and 501 of PRIIA, but stated that the federal share of costs may be up to 100 percent.

- **A Vision for High-Speed Rail:** On April 16, 2009, President Obama announced a vision for high-speed rail in America. The U.S. DOT issued a *High-Speed Rail Strategic Plan* in April 2009, which included the Empire Corridor. On June 23, 2009, the FRA issued interim program guidance (74 CFR 29900) establishing the selection process, priorities, and evaluation criteria for grants made under financial assistance appropriated under ARRA: approximately \$1.9 million in unobligated FY 2008 U.S. DOT appropriations (P.L. 110-161) funding and \$90 million for intercity passenger rail grants in the FY 2009 U.S. DOT appropriations (P.L. 111-8) funding. FRA combined the three PRIIA grant programs into the HSIPR Program. On January 28, 2010, the first grant selections for the HSIPR program were announced. The State of New York has successfully competed for a total of \$151 million in ARRA high-speed rail funding.
- **FY 2009 U.S. DOT Appropriations Act:** An additional \$90 million was appropriated as part of the FY 2009 U.S. DOT Appropriations Act (P.L. 111-8), similar to the FY 2008 Capital Assistance to states’ grants. Following awards made by U.S. DOT under the solicitation issued in June 2009, \$65 million of the original \$90 million of FY 2009 Appropriations Act funds remained unused. On April 1, 2010, U.S. DOT issued notice of funding availability for these FY 2009 U.S. DOT Appropriations Act funds, to be used for construction projects with a 50 percent non-federal match.
- **FY 2010 Transportation, Housing and Urban Development and Related Agencies Appropriations Act:** Division A of the Consolidated Appropriations Act, 2010 (PL 111-117) appropriated a total of \$2.5 billion for the HSIPR program. Of that amount, \$50 million was made available by the U.S. DOT for planning projects, including multi-state proposals, with a 20 percent non-federal match. In June 2010, the U.S. DOT announced funding availability of \$2.37 billion in FY 2010 appropriations funding for final design/construction and/or preliminary engineering/NEPA projects for individual projects or corridor programs with a 20 percent non-federal match. Remaining FY 2010 U.S. DOT appropriations were allocated to the HSIPR program for administration and research.
- **Redistribution of ARRA Funds:** On December 9, 2010, the U.S. DOT announced a redistribution of some ARRA funds to other corridors after the incoming governors of Wisconsin and Ohio indicated that they would not move forward with \$703 million designated for Wisconsin and \$400 million designated for Ohio high-speed rail projects. In 2011, Florida cancelled its high-speed rail project, and approximately \$2.3 billion was redistributed among New York and other states; New York State received an additional \$354.4 million, plus \$7.3 million in supporting funding.

President Obama’s budget for FY 2014 included \$6.4 billion to support passenger and freight rail projects across the country, under a new coordinated program called the National High-Performance Rail System (NHPRS). Over the subsequent five years, the President’s total request for the NHPRS was \$40 billion, of which \$13 billion was to support existing services, and \$27 billion was to be invested in improving and enhancing the Nation’s rail network.

- **FAST Act:** President Obama signed into law on December 4, 2015 the Fixing America's Surface Transportation Act, or FAST Act (P.L. 114-94), the first long-term Federal transportation bill in more than 10 years. The FAST Act authorized \$305 billion over fiscal years 2016 through 2020 for the Department of Transportation's rail, highway, motor vehicle safety, public transportation, motor carrier safety, hazardous materials safety, research, technology and statistics programs. The FAST Act also marked the first time intercity passenger rail programs were included in a comprehensive, multimodal surface transportation authorization bill, with more than \$10 billion authorized for intercity passenger and freight rail grants.

Under the Biden Administration, it is expected that the federal government will continue its role in supporting high speed rail projects by providing a number of funding programs. The 2021 Infrastructure Investment and Jobs Act (IIJA) includes \$89.9 billion of transit funding over the next five years and an additional \$66 billion for passenger rail improvements.

State Capital Funding Programs

Section 14-d of the New York State Transportation Law authorizes the Commissioner to enter into contracts for the purpose of maintaining and improving rail transportation service. New York State has participated in capital funding for intercity rail services through a number of grant and bond programs, as follows:

- **Rail Service Preservation Program:** This \$100 million, multi-year freight and passenger rail program was established in FY 2005-06 by the State Legislature, with portions of the funding being appropriated on an annual basis; some of these funds have been made available.
- **Transportation Capital Bonds:** New York State voters approved a *Rebuild and Renew New York Transportation Bond Act of 2005*, providing \$2.9 billion for transportation funding, of which \$27 million was allocated each year for rail and port projects. The Empire Corridor work is supported in part with a portion of these bond funds.
- **State of New York Awards:** The State of New York received \$28.5 million in FY 2010 transportation appropriations funds. In the spring of 2011, FRA solicited grant applications under the HSIPR Program for Individual Projects (e.g., PE/NEPA and FD/Construction) and Service Development Programs. The application period closed on April 4, 2011.

The New York State FY 2012 budget included \$26.6 million for passenger and freight rail projects, of which \$10 million was divided between freight rail and high-speed passenger rail improvements. In addition, the Legislature and Governor agreed to a Memorandum of Understanding (MOU) that directed NYSDOT to develop a two-year capital plan for FY 2013 and FY 2014. The MOU defined a program of infrastructure capital projects covering all modes under NYSDOT jurisdiction, at a level \$100 million over the levels originally proposed in the Governor's 2012-13 Executive Budget. Rail freight projects will be eligible for funding under a second round of Regional Economic Council Program funding.

5.3.3. Program Capital Funding Financial Roles

Federal Railroad Administration (FRA)

FRA is charged with promulgating and enforcing rail safety regulations, administering railroad assistance programs, and conducting research and development in support of improved railroad safety and national rail transportation policy. As noted above, through a number of legislative

initiatives, FRA received Congressional authorization and funding in support of high-speed passenger and freight rail operations. In this capacity, FRA became responsible for implementing and ensuring compliance with PRIIA, which provides the regulatory framework by which HSR funding was to be distributed to states and railroad operators.

With HSIPR, FRA established a sequence of activities to facilitate the evaluation of various high-speed rail proposals across the nation. The first level of effort – Tier 1 – requires the identification and conceptualization of alternatives for implementing high-speed rail improvements in a defined corridor, the creation of a practical framework for evaluation and comparison among these alternatives, and the selection of a Preferred Alternative to be advanced for detailed analysis.

The next phase (Tier 2) requires that applicants develop details about the specific project elements proposed for investment, such as bridges, new track segments, grade separations, new stations, etc., and complete detailed environmental review for each as they approach implementation, to ensure that individual investments will not have unacceptable impacts. Upon receipt of NEPA clearance via Records of Decision (RODs), Categorical Exclusions (CEs), or Findings of No Significant Impact (FONSI), and completion of preliminary engineering, these individual elements become eligible for FRA funding for final design, property acquisition, and construction.

NYSDOT is following the HSIPR process for this High Speed Rail Empire Corridor Program, and this Tier 1 Final EIS in part satisfies FRA's procedural requirements for service development programs and corridor investment plans.

New York State Department of Transportation (NYSDOT)

NYSDOT is responsible for coordinating and developing comprehensive transportation policy for the state; coordinating and assisting in the development and operation of transportation facilities and services for highways, railroads, mass transit systems, ports, waterways and aviation facilities; and formulating and maintaining a long-range, comprehensive statewide master plan for the balanced development of public and private commuter and general transportation facilities.

NYSDOT also administers a public safety program for railroads and motor carriers engaged in intrastate commerce, and provides oversight in matters relative to the safe operation of bus lines, commuter railroads and subway systems that are publicly subsidized.

Section 14-d(2)(d) of the State Transportation law authorizes the Commissioner to “*utilize federal monies*” to improve rail transportation service or rail transportation facilities. NYSDOT can also spend non-federal funds which are appropriated to the agency for these purposes. Pursuant to Section 209 of PRIIA, the states in which Amtrak operates intercity passenger rail services must work with Amtrak to establish a basis for allocating both direct project construction or capital replacement costs and a portion of general operating and maintenance costs of its services to each state in proportion to the service Amtrak provides. Effective April 2012, this element of PRIIA obligated NYSDOT to budget for and fund some portions of Empire Service that were previously paid for entirely by Amtrak.

Amtrak

As the current passenger rail service provider and the owner of many of the stations on the Empire Corridor, Amtrak may contribute financially to high-speed passenger rail operations. Participation could involve providing train service; covering operating deficits; participating in funding capital improvements; or providing construction, maintenance, or dispatching resources along the ROW.

This participation could be in part a function of Amtrak's annual budget and past practices regarding cost sharing, property and operating agreements with NYSDOT and CSXT. Future cost sharing arrangements would be governed by Section 209 of PRIIA, as previously discussed.

CSX Transportation, Inc.

CSXT, as the host railroad, owns 85 percent of the 463-mile Empire Corridor ROW from Poughkeepsie to Buffalo and Niagara Falls. Where CSXT owns the ROW, the company would, through its labor agreements, be involved in program construction and construction oversight. However, for the section of railroad from Poughkeepsie to Hoffmans, where Amtrak has entered into a lease agreement with CSXT, Amtrak, and NYSDOT will be responsible for program construction and oversight.

CSXT would be involved in the High Speed Rail Empire Corridor Program as necessary to ensure that construction projects along that portion of the corridor over which it operates would be implemented without adverse effects on its freight operations. CSXT is also a member of the program steering committee, the Empire Project Advisory Committee (EPAC) and, in that capacity, has provided technical and operational input and reviewed analyses and findings to ensure that its operating needs were addressed in formulating the Preferred Alternative.

Metro-North Railroad

Metro-North, the host railroad and owner of the 61-mile Empire Corridor South segment between Spuyten-Duyvil and a point just beyond Poughkeepsie station, would be involved in the High Speed Rail Empire Corridor Program as necessary to ensure that construction projects located along that portion of the corridor over which it operates would be implemented without adverse effects on its daily commuter rail services. Metro-North also could participate in funding capital improvements along its section of the corridor. Where Metro-North is responsible for the ROW, it would, through its labor agreements, be involved in program construction and construction oversight. Metro-North is also a member of the EPAC and, in that capacity, has provided technical and operational input and reviewed findings to ensure that its operating needs were addressed. Finally, it is likely that along portions of the Empire Corridor South over which it operates, Metro-North will participate in specific improvements that were a product of the Hudson Line Railroad Corridor Transportation Plan.

Regional Transportation Authorities and Municipalities

Transportation funding and services are frequently coordinated at the sub-regional and municipal level by regional transportation authorities (RTAs). The RTAs are active partners in project studies, advocacy and implementation, and frequently partner with NYSDOT on projects that will affect their jurisdictions. For the High Speed Rail Empire Corridor Program, the following RTAs are involved:

- Niagara Frontier Transportation Authority (Niagara Falls & Buffalo),
- Rochester-Genesee Regional Transportation Authority,
- Central New York Regional Transportation Authority,
- Capital District Transportation Authority.

These organizations could be involved in capital funding for station upgrades and/or parking improvements at stations. As federal funds provided to states and municipalities for rail system improvements are likely to require local match, in addition to state matching funds, some of the match could be provided by the state, municipality, or RTA.

Metropolitan Planning Organizations (MPOs)

Metropolitan Planning Organizations must approve any project in their jurisdictions receiving federal funding. By approving a project, the MPO is agreeing to incorporate the project into the State Transportation Improvement Program (STIP) and the Transportation Improvement Program (TIP). This ensures that political leaders and agency heads have acknowledged the funding requirement for the project and that the project has satisfied NEPA requirements, is eligible to receive federal funding, and is included in the formal five-year plan for that jurisdiction.

Private/Public Partnerships

Private/public partnerships are sometimes employed to gain coordinated benefits for complex and costly transportation projects. Private sector financing may be used for those elements of a project which are likely to generate a defined revenue stream that can be dedicated to debt repayment, such as a parking facility. In the case of the High Speed Rail Empire Corridor Program, private sector participation could also involve station rehabilitation or replacement, where food concessions and rental payments from tenants create a revenue stream for debt repayment. There are also ways to structure locomotive and coach purchases through a third party such that private financing can be made available to help defray the costs of rolling stock acquisition.

5.4. Operations and Maintenance Funding Requirements and Sources

Operating funds are used to pay the day-to-day costs of running a transportation service. Labor costs include salaries and benefits. Fuel and utility costs cover vehicle propulsion, either combustion fuels or electric power, and heating, lighting, air conditioning, phones, and data network fees. Custodial and janitorial fees include cleaners, custodians, trash removal, recycling apparatus and hauling agreements, rent, license and permit renewal fees (except where these are incurred in support of a capital project, on a one-time basis), gardeners and landscapers, and professional services (legal, accounting, etc.). Repair costs include the costs for facility and equipment upkeep and minor component replacement. Major component campaigns, as in the replacement of brakes across an entire fleet on a programmed basis, are typically funded out of capital sources.

As previously indicated in Section 5.2.2, operating costs are generally covered by a combination of ticket revenue and other non-ticket revenue sources. By comparing the operating costs with the annual anticipated revenues from both ticket and non-ticket revenues, the annual operating subsidy that the service will require is derived. These operating subsidies are typically provided by state or municipal governments.

Most public transportation in the U.S. requires subsidy; ticket revenues are rarely sufficient to cover the full cost of the service. Metro-North receives operating subsidies from the New York Metropolitan Transportation Authority (MTA). In New York, Amtrak receives operating subsidies from the U.S. DOT and NYSDOT. Except for payments to Amtrak, the federal government terminated its operating subsidy program in the 1970s.

Operating subsidies are generally likely to be available for the High Speed Rail Empire Corridor Program as follows:

- **Federal Operating Assistance:** Amtrak receives federal operating funds. Following implementation of PRIIA Section 209 on October 1, 2013, however, use of these funds was limited to the Northeast Corridor and long distance services. The Lake Shore Limited, which operates

over the corridor en route to Chicago, will receive continuing federal operating support. The balance of the corridor operating subsidies will need to derive from state and local sources.

- **State Operating Assistance:** NYSDOT works collaboratively with Amtrak on a number of projects. NYSDOT has led the effort to transform the 94-mile-long Hudson Line from Schenectady to Poughkeepsie, currently a CSXT-freight controlled line, to an Amtrak-controlled line. Additionally, NYSDOT has entered into a long-term agreement with Amtrak on further developing the Hudson Line for passenger rail use, providing operating subsidies and other funding when necessary and available, thus ensuring Amtrak's continuing control over maintenance, operations, and dispatching.
- **Section 209 of PRIIA** establishes that Amtrak's operating losses be covered through a combination of ticket revenue and state support. Historically, New York State has provided support to the Adirondack Service, and with the implementation of PRIIA Section 209, NYSDOT has been providing financial support to the Empire Service, effective October 1, 2013. Although this new law created new funding responsibilities for NYSDOT, it offers an opportunity for the state to have greater control over the Amtrak service. Through the Hudson Line lease and the implementation of PRIIA Section 209, NYSDOT and Amtrak have developed a strong collaborative relationship that will be strengthened with the implementation of any of the Build Alternatives.
- **Regional Transportation Authorities or Municipal Operating Assistance:** Some costs associated with the operation of stations or parking areas at stations could be assumed by municipalities or RTAs, as previously discussed in Section 5.3.3.
- **Metropolitan Planning Organizations:** MPOs do not fund transportation projects (although they may fund regional studies that are used by agencies seeking funding). MPOs serve as a clearinghouse for necessary local and state project approvals, and are responsible for managing the regional transportation plan, of which any project from this program would have to be an approved component in order to be eligible for federal funding.

5.5. Financial Performance of Alternatives

Tier 1 concept level design and operations of the High Speed Rail Empire Corridor Program alternatives required the consideration of several operating scenarios and associated capital improvements. The goal of each scenario was to minimize passenger and freight train schedule conflicts, address critical congestion and delay locations, and sequence investments to yield continual improvement in corridor train service without unacceptably interfering with existing services. These operating scenarios considered the following:

- Upgrade tracks, railroad signals, switch and interlockings, and communication systems to gain speed and reliability;
- Provide sufficient additional track to segregate to the greatest degree practical passenger from freight services; and
- Reduce the number of at-grade crossings or provide controls to restrict vehicle interference with train operations and satisfy FRA safety requirements associated with higher-speed train operation.

For Alternative 90A, the investment primarily would involve improving existing track and railroad signal systems to gain speed and reliability. For Alternatives 90B, 110 and 125, the reduction in conflicts between freight and passenger trains would be achieved through the construction of longer passing sidings and/or new dedicated passenger track, allowing one train to bypass the other without delay to either.

While Empire Corridor South currently experiences relatively few conflicts between passenger and freight services, Empire Corridor West has significant freight and passenger train route sharing, with concomitant impacts on passenger service speed and reliability. For the western segment, Alternatives 90B, 110, and 125 would achieve greater or total separation of freight trains and passenger trains by using a new dedicated passenger track in the existing corridor (Alternatives 90B and 110) or by purchasing and constructing an entirely new, straighter and flatter, fully electrified ROW (Alternative 125). The Base Alternative and Alternative 90A would involve additional passing sidings and switches to permit passenger trains to pass freight trains entirely within the existing ROW. South of Albany, the High Speed Rail Empire Corridor Program would modify existing tracks, eliminate minor conflicts through some track improvements and better railroad signaling, and construct other upgrades to improve already good (110 mph) speed performance between New York and Albany. In its entirety, the Empire Corridor would realize the following improvements:

- South of Albany, create track connections, modify interlockings, and make additional operational improvements that would result in segments of track where freight and passenger train conflicts would be better managed without slowing passenger service;
- West of Albany, eliminate selected grade crossings to enable higher speeds while meeting FRA safety requirements;
- West of Albany, add double track segments (including property acquisition to permit expanded right-of-way) and some selected “fourth track” passing sidings to eliminate freight and passenger train conflicts; and
- Over the entire route, schedule the added, higher-speed services to avoid conflicts with freight operations.

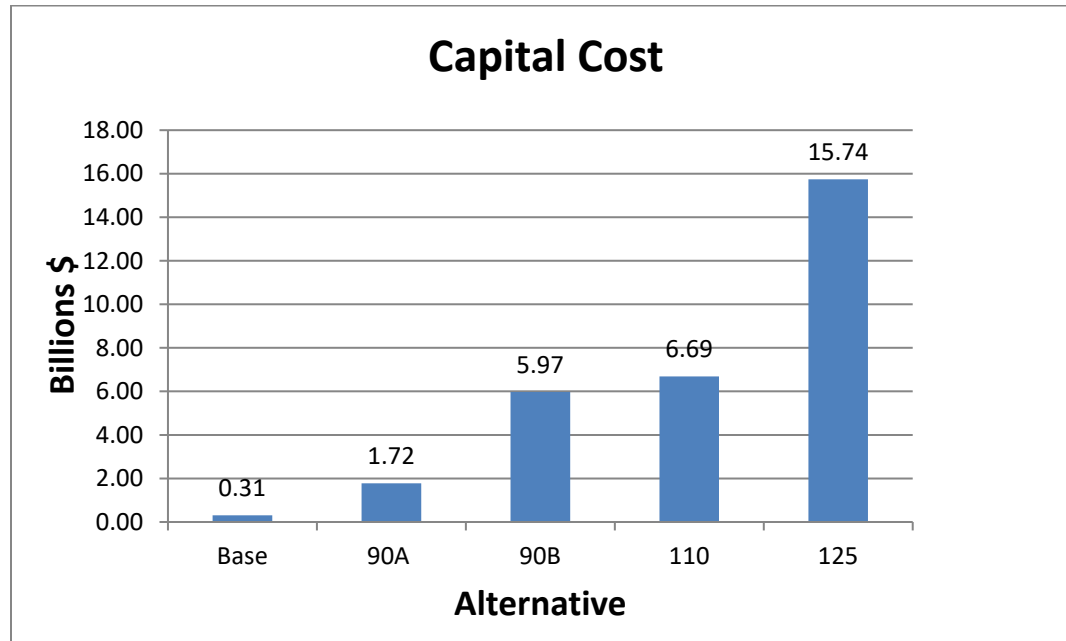
The various improvements proposed under each alternative would impose very different capital costs, ranging from \$310 million for the Base Alternative to \$15.74 billion for Alternative 125. Exhibit 5-1 shows these values graphically. The current status of Base Alternative improvements is reviewed in Chapters 2 and 3 (under the Base Alternative section).

5.5.1. Capacity of Empire Corridor Service to Absorb Infrastructure Improvements

There is a limit as to how much interference operating rail services can absorb before train schedules are adversely affected due to slow-orders at work sites, or the requirement to manage two-way traffic on a single track, while the other track (or passing siding) is improved. In the case of the High Speed Rail Empire Corridor Program, the potential for adverse effect would likely be most pronounced for Alternative 90A, in which additional parallel track and passing sidings, and associated switches and turnouts to and from the main freight line, would be constructed in close proximity to operating trains. Because the improvements proposed under Alternative 90A also would occur under Alternatives 90B and 110, operating rail service under those alternatives also would be affected by proposed infrastructure improvements. The improvements proposed for Alternative 90A along Empire Corridor South and Niagara Branch would occur in Alternative 125. Alternative 125, with a new, separate corridor, would therefore present the least impact to the existing Empire Service.

Specific corridor construction impacts upon train service operations will be further defined in Tier 2 as detailed engineering is advanced on the Preferred Alternative. During Tier 2, the rate at which capital funding will be provided and the ability of existing train operations to absorb the effects of nearby construction will be more precisely assessed.

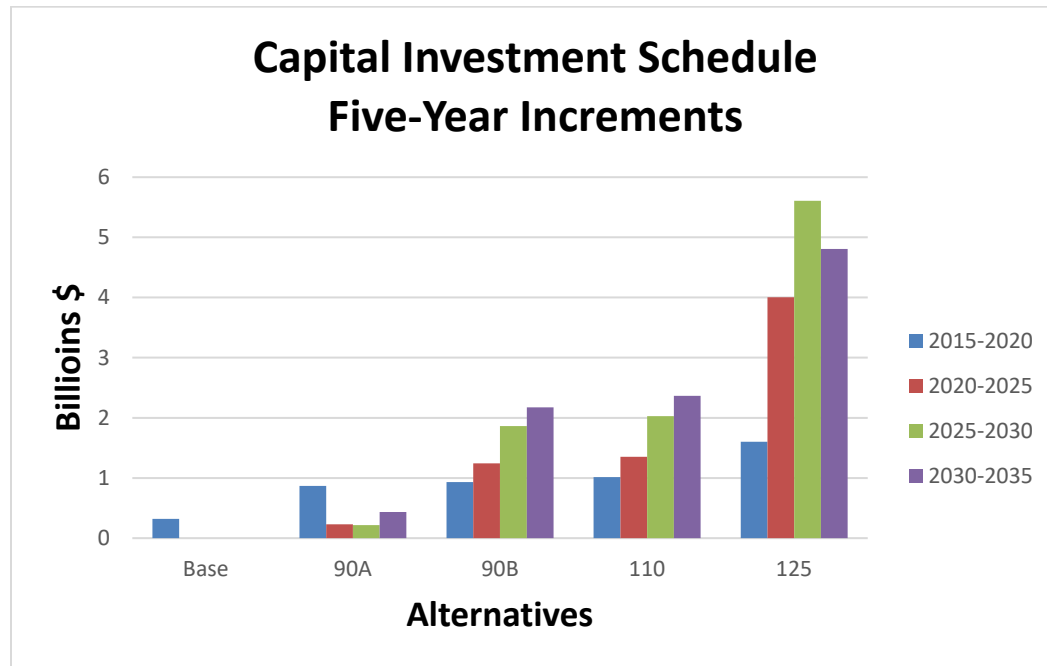
Exhibit 5-1—Capital Costs



5.5.2. Sequence of Capital Investments

The High Speed Rail Empire Corridor Program would result in continuing investment over most or all of the 20-year program life, from 2015 through 2035.¹⁴⁹ The existing rail corridor would remain in service as the improvements are made. The program improvements would be constructed in a sequence that minimizes interference with daily service; as a result, service improvements would occur and the benefits would be realized incrementally over the entire implementation time frame. Exhibit 5-2 presents a proposed schedule of capital investments for each alternative. Capital costs are shown in 2017 dollars to enable comparison of total cost and overall benefit among alternatives. In subsequent phases of program evaluation (Tier 2), costs will be forecast with greater precision, based on the sequence of proposed improvements, which in turn will depend upon the level of available funding. The investments are shown beginning in 2015, because Base Alternative projects have already been started, as they were part of the “no action” condition implementing NYSDOT’s intentions even if none of the Build Alternatives were funded. To date, approximately \$150M has been spent on these initial improvements.

¹⁴⁹ Spending on Base Alternative improvements began in 2015. Other than for those elements common to both the Base and the Build Alternatives as described in Chapter 3, no spending on any Build Alternative will occur until the NEPA process is concluded.

Exhibit 5-2—Capital Expense Sequence for High-Speed Rail Alternatives

5.5.3. Estimates of Annual, Operating and Maintenance Costs, Ridership and Revenues

Operating and Maintenance Responsibilities and Costs

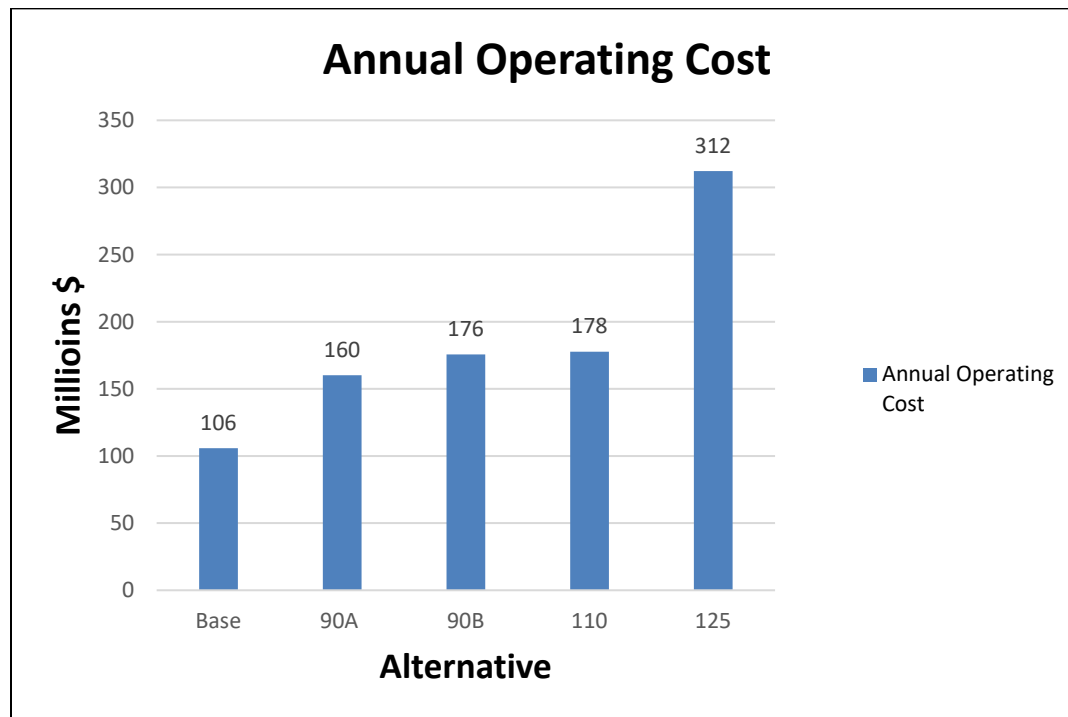
Amtrak is responsible for operation of intercity passenger rail service along the entire Empire Corridor. In the past, Amtrak and CSXT shared maintenance responsibilities between Poughkeepsie and Hoffmans. In 2012, NYSDOT facilitated a lease agreement between CSXT and Amtrak for portions of the Empire Corridor between Poughkeepsie, Albany-Rensselaer, and Hoffmans, NY, which transferred these CSXT maintenance and dispatching responsibilities to Amtrak. When combined with previous lease agreements for portions of the corridor within this 94-mile segment, Amtrak assumed full responsibility for dispatching and maintenance from the northern boundary of Metro-North control through Albany to Control Point (CP)¹⁵⁰ 169 at Hoffmans, where CSXT's freight-only Selkirk Branch joins the Empire Corridor. CSXT maintains responsibility for maintenance and dispatching on the portion of the corridor it owns between Hoffmans and Niagara Falls, and Amtrak continues these responsibilities on the portion of the corridor it owns between Penn Station and Spuyten-Duyvil. Metro-North is responsible for ownership, maintenance, and dispatching along the corridor between Spuyten-Duyvil and Poughkeepsie.

Exhibit 5-3 indicates the total annual operating cost for each Build Alternative as compared to the Base Alternative. Projected operating costs are based on existing Amtrak operating procedures and

¹⁵⁰ A control point is an interlocking, or the location of a track signal or other marker, the indications of which dispatchers can specify when controlling trains.

crew assignment protocols. The Base Alternative would include the existing four daily round-trips between Albany and Niagara Falls, while the higher-speed alternatives would presume a doubling, from four to eight daily round trips. For Alternative 125, there would be almost five times the service (from four to 19 daily round trips) provided by the Base Alternative. The costs are shown in constant 2017 dollars to allow comparison across the alternatives.

Exhibit 5-3—Estimated Annual Operating & Maintenance Costs



The higher operating costs for Alternatives 90B and 110 relative to Alternative 90A would be due to the addition of a dedicated passenger-only mainline track for the 294-mile-long Empire Corridor West. In comparison, Alternative 90A would implement only selected passing sidings to permit more fluid corridor dispatching. Alternative 125 would have the highest O&M costs, reflecting higher track maintenance standards and the costs of maintaining electric power distribution infrastructure (overhead catenary, substations, protection) for the dedicated high-speed track.

Ridership

The number of passengers carried, which determines the required number of trains, and, in turn, the number of crews, cleaning and maintenance staff, etc., drives both operating costs and ticket revenues. Forecasting ridership for transportation services is a complex statistical process, which predicts travelers' future behavior based on analysis of past behavior in similar circumstances. The forecasting methodology employed for this Tier 1 EIS presumes that travelers:

1. Determine trips by the most appealing travel mode available for each journey;

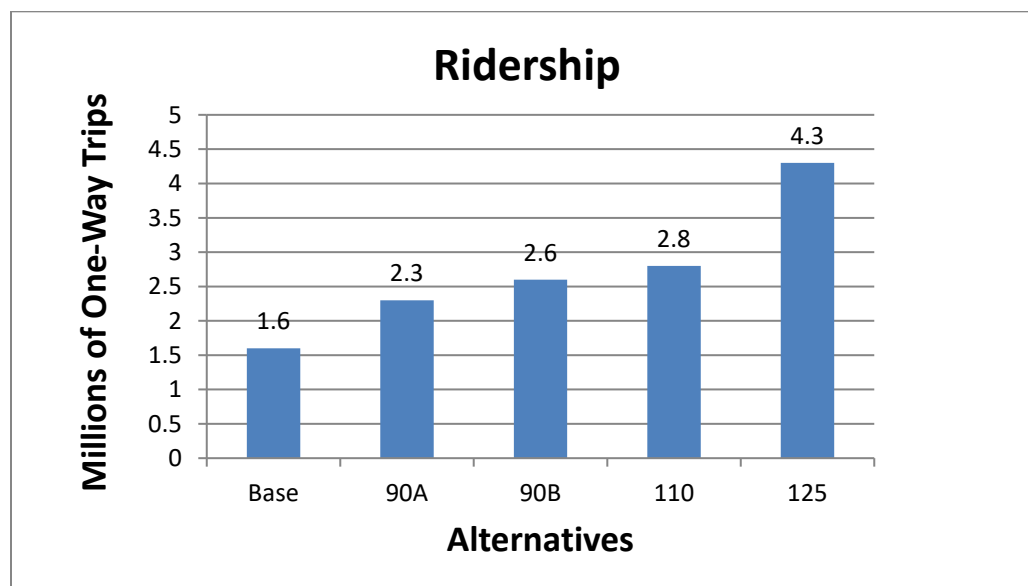
2. Choose among the various available options based on (in generally descending order): cost and time, reliability, convenience (accessibility), comfort, and amenity;
3. Consider the difficulty of accessing the transport service in choosing how to travel (e.g., traffic congestion to a station, lack of parking, long walks to get to bus or train platforms); and
4. Act rationally – that is, in every case, they use the least costly or most efficient travel product (in terms of the above features) available.

Given the above “drivers” of travel mode choice (bus, car, plane, train, bicycle, walking), a computer model was used that recognizes the comparative speed, cost, accessibility, etc. of the travel modes between trip origins and destinations. For this program, the model assigned every trip in New York State that both begins and ends within the Empire Corridor. The model placed the Empire Corridor train service in competition with automobile, bus and airplane travel modes. Assessing comparative cost, time, convenience, etc., the model forecast for the various alternatives the number of people that would elect to ride the train over automobile, bus, or airplane.

Ridership forecasts are a function of market size and frequency of train service as well as speed, cost, and convenience (e.g., number of transfers required, ease of access to stations). While more frequent service might attract more riders, there is a point of diminishing returns, as the capital and operating costs of the additional train sets grow beyond the value of the additional ridership the increased service may attract. The alternatives were therefore structured to maximize ridership at practical levels of investment in rolling stock and maintenance costs given likely federal and state funding over the program’s implementation period. Refer to Appendix B, *Ridership and Revenue Forecasting Report for the High Speed Rail Empire Corridor Program*, for additional details regarding the ridership forecasting methodology.

Exhibit 5-4 presents the 2035 annual ridership forecasts for the Empire Corridor under the five alternatives.

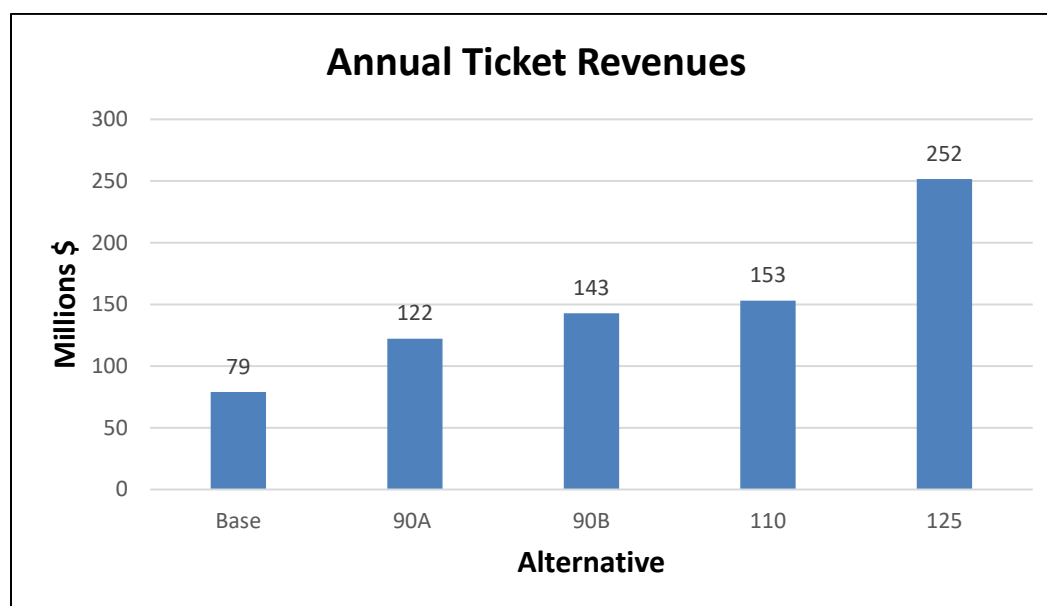
Exhibit 5-4—2035 Ridership Forecasts



Operating Revenue

Annual operating revenue forecasts are based on ridership forecasts between station pairs, multiplied by the current Amtrak travel fare between those pairs, assigned to the target comparison year. This allows comparison among the alternatives in terms of capital investments, annual O&M costs, and anticipated gross annual revenue and resulting required subsidy all in 2017 dollars. Exhibit 5-5 presents the estimated range of annual operating revenue in 2017 dollars for the five alternatives.

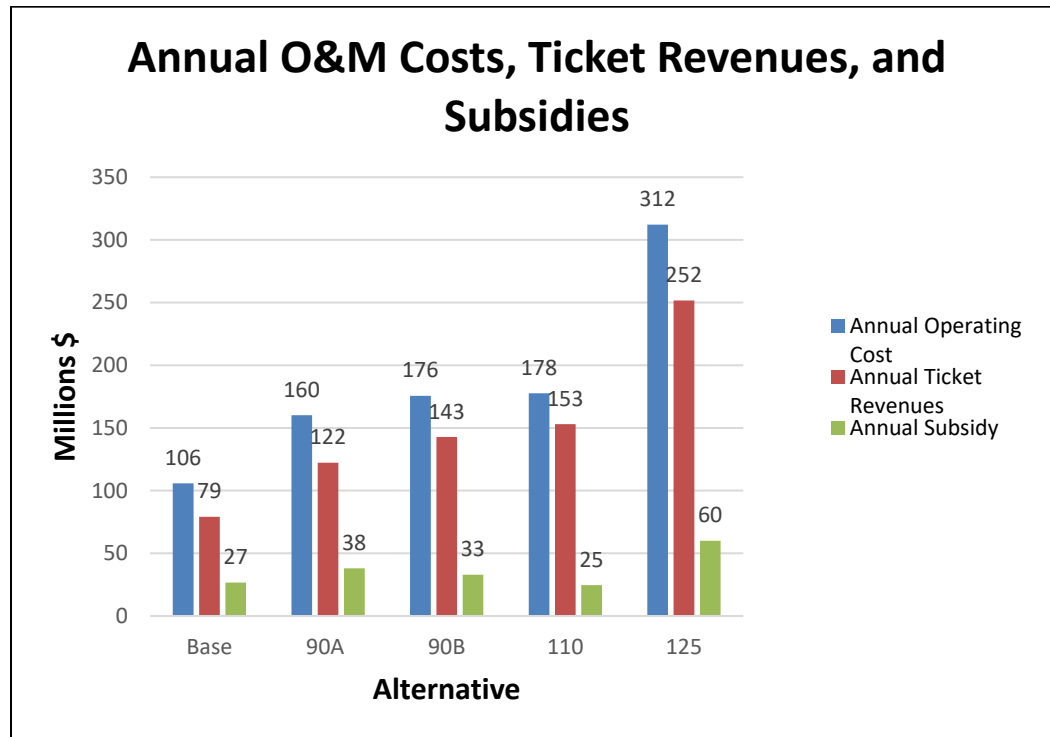
Exhibit 5-5—Estimated Annual Operating Ticket Revenue



Annual Operating Deficits

Exhibit 5-6 summarizes the annual operating deficits for the five alternatives. These deficits account for the difference between total operating costs and combined anticipated ticket revenues. Non-ticket revenues derived from advertising, station concessions and leases, and utility leases along the ROW, while salutatory and contributory to the program, do not generally produce sufficient additional income that would alter the operating deficit. These additional revenues would likely be similar across all alternatives.

Exhibit 5-6 indicates that deficits, and corresponding subsidies, would be lowest for Alternative 110 and greatest for Alternative 125. In general, while faster trains incur lower labor costs, as hourly wage train crews spend fewer hours on each run, propulsion costs are higher at high speeds, as are the costs of track maintenance, since high-speed operations cause greater track wear. In addition, the greater number of daily trains intended to be operated under Alternative 125 would lead to higher crew and equipment maintenance costs.

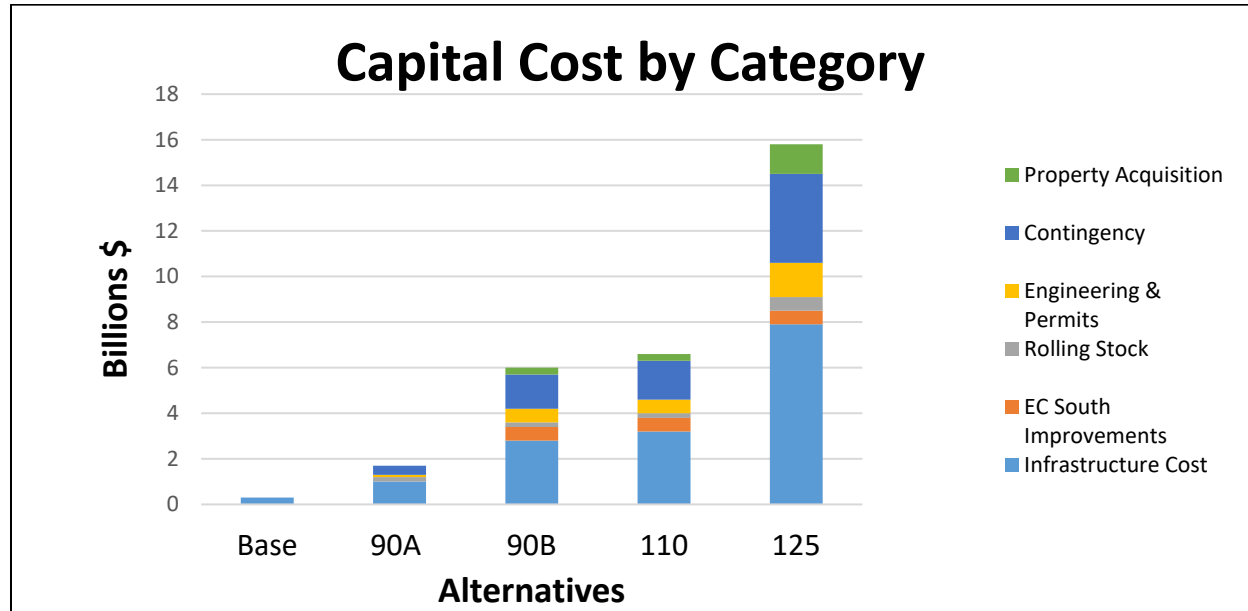
Exhibit 5-6—Estimated Annual Operating Subsidy

5.5.4. Financial Profiles of Alternatives

Exhibit 5-7 shows projected Tier 1 capital costs for the five alternatives by category: rolling stock purchases; planning, engineering design, and permitting; property acquisition costs; infrastructure construction costs; and Empire Corridor South Improvements costs. Capital cost estimates also include a 35 percent contingency factor to account for uncertainties at the Tier 1 program level of analysis for infrastructure improvements. As there are fewer uncertainties in rolling stock costs, equipment cost estimates include only a 5 percent contingency factor.

The capital costs for the five alternatives would range from \$310 million for the Base Alternative, to \$15.74 billion for Alternative 125. While the analysis shows all costs in 2017 dollars, actual investments would be made gradually over the 20-year project life. A staged implementation approach is based on two factors: first, federal and state governments have limited financial capacity in any single year; second, existing rail operations can only support a limited amount of infrastructure renewal or new construction along the ROW before construction activities interfere with daily service.

Exhibit 5-7—Capital Costs by Spending Category



The anticipated financial performance of each of the five alternatives is as follows.

Base Alternative

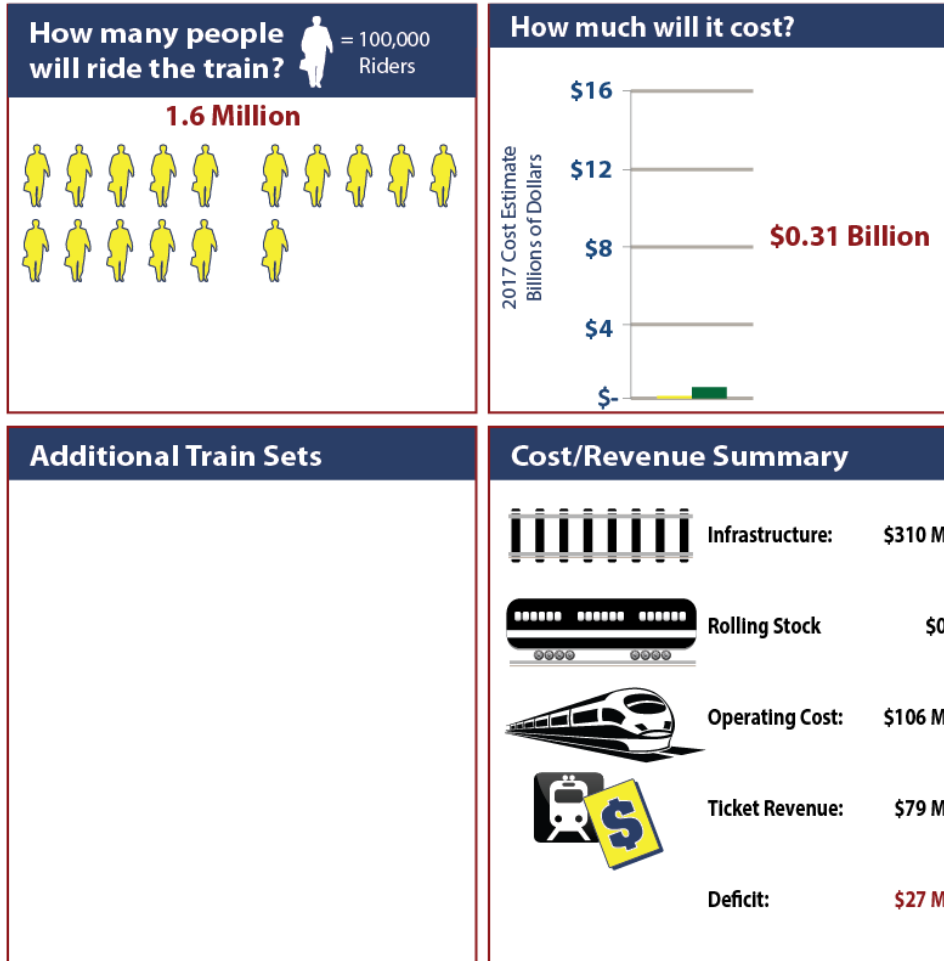
Because there would be no change from the current operation, no additional rolling stock is required to implement the Base Alternative. Operating costs would continue as they are currently incurred by Amtrak, approximately \$106 million annually. Ridership is forecast to be 1.6 million in 2035, generating ticket revenue of \$79 million, and resulting in a deficit of \$27 million. Infrastructure costs to implement the Base Alternative would be \$310 million; no new property is required.

The Base Alternative was completed by 2021, and its benefits (reduced congestion) will accrue gradually over the construction period, with gradual improvements in reliability (on-time performance) and some modest increases in average speed.

Exhibit 5-8—Characteristics of Base Alternative

BA 90A 90B 110 125

Base Alternative - What Does It Do?



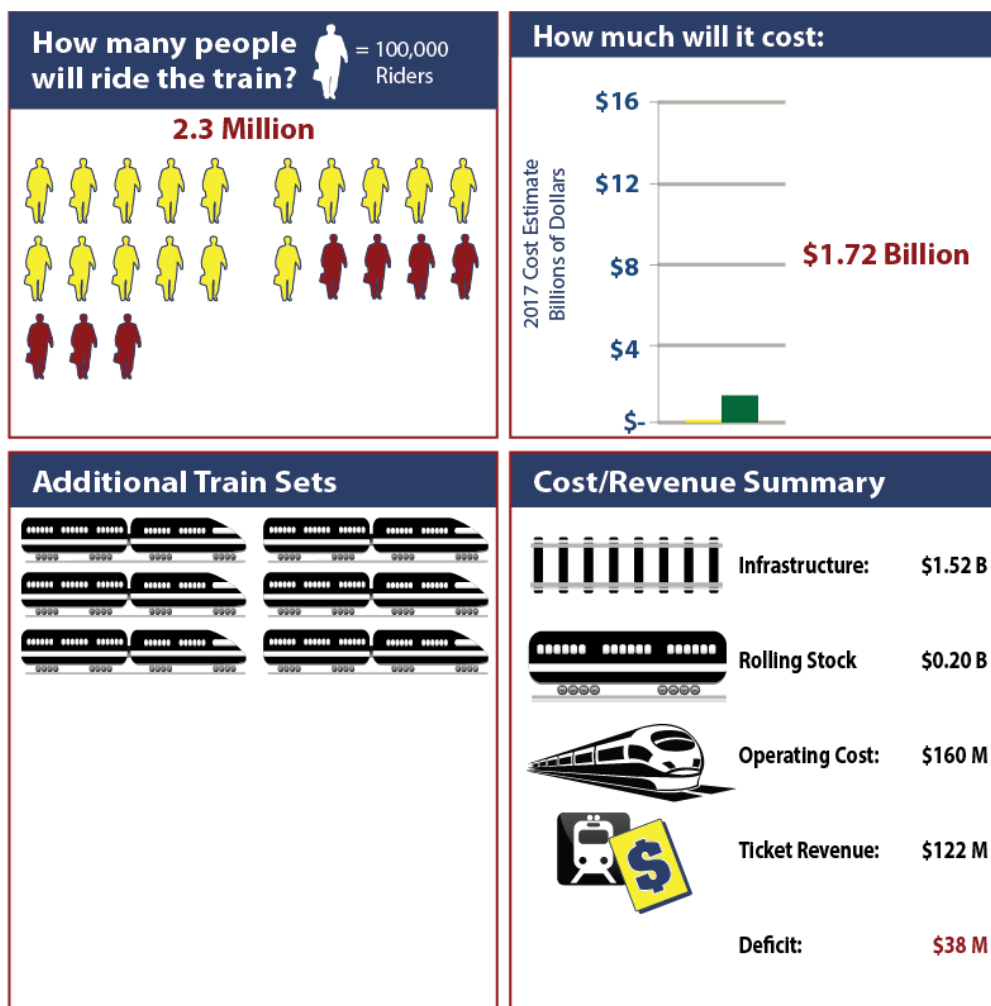
Alternative 90A

The additional service would require purchase of six additional train sets, each with a locomotive and five passenger coaches to supplement the existing fleet. The acquisition of additional rolling stock would add \$0.20 billion in capital costs. Alternative 90A would include \$1.52 billion in infrastructure costs for additional passing track and various railroad signal, grade crossing and switch improvements to reduce freight/passenger train conflicts, increase permissible speeds through curves, improve system reliability, and secure the highest possible speed profile for the existing alignment. In total, capital costs would reach \$1.72 billion for Alternative 90A; this alternative would not require that any property be acquired. The required additional train maintenance and additional service would increase operating costs to \$160 million. Based on shorter travel times due to increased speed, ridership would grow to 2.3 million annual passengers by 2035. Ticket revenue would be \$122 million, resulting in a deficit of \$38 million, annually.

Exhibit 5-9—Characteristics of Alternative 90A



Alternative: 90A - What Does It Do?



NYSDOT would expect to complete Alternative 90A by 2035, and its benefits would be expected to accrue in steps, with approximately 25 percent of the maximum and average speed benefit accruing at the end of each five-year interval, with the completion of each segment of segregated track.

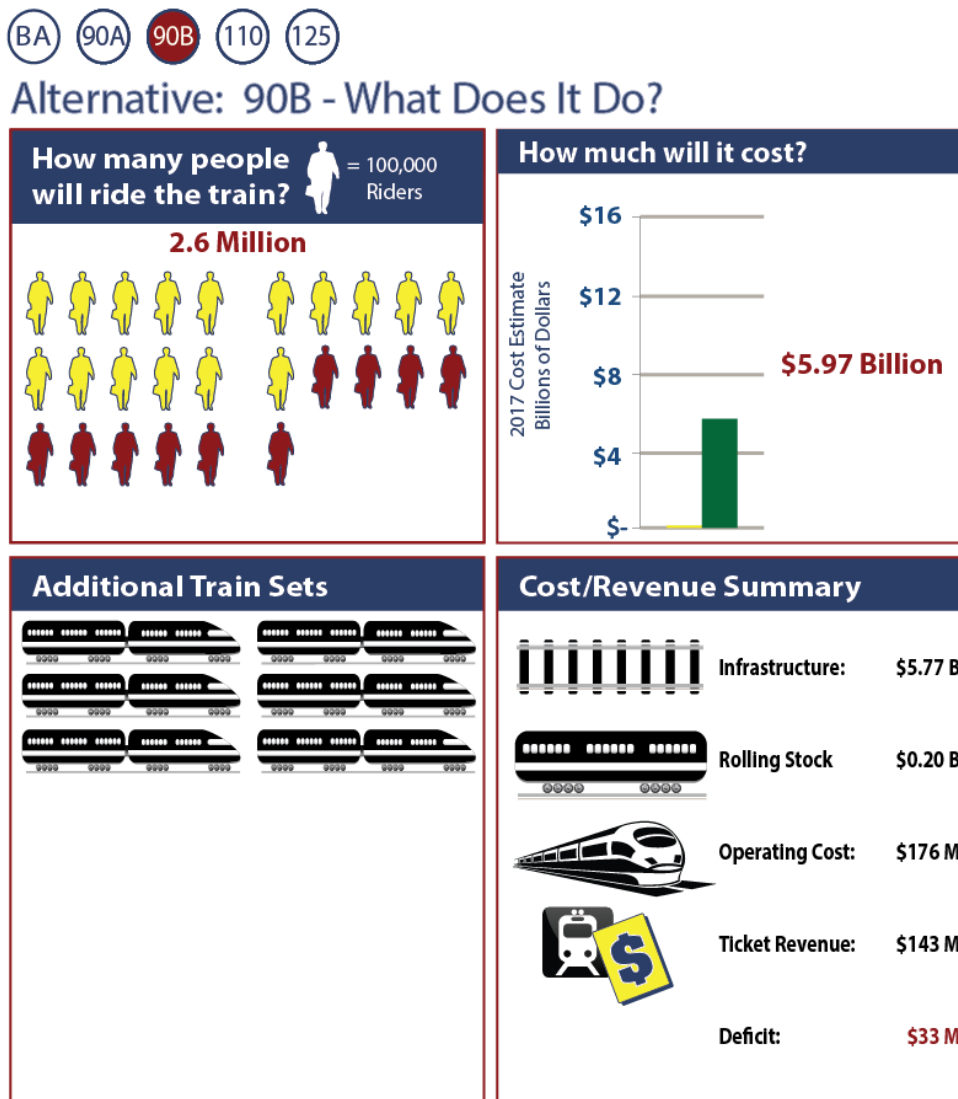
Alternative 90B

Alternative 90B would accomplish its projected service improvements using the same fleet as required for Alternative 90A, involving six additional train sets and rolling stock costs of \$0.20 billion. The central aspect of Alternative 90B would involve the provision of a third track west of Albany to be constructed within the existing CSXT ROW, giving significant separation between freight and passenger traffic. With the additional property required to grade separate the ROW and to reduce or eliminate curves to permit higher maximum speeds, infrastructure costs would be \$5.77 billion. The

total capital cost for Alternative 90B would be \$5.97 billion in 2017 dollars. Operating costs would rise to \$176 million, accounting for the additional daily round trip (compared to the Alternative 90A). Ridership is forecast at 2.6 million, generating ticket revenues of \$143 million, and resulting in a deficit of \$33 million.

Alternative 90B is projected to be completed by 2035, and its maximum and average speed benefits would accrue in steps, with approximately 25 percent of the benefit accruing at the end of each five-year interval, as each new segment of dedicated track is completed.

Exhibit 5-10—Characteristics of Alternative 90B



Alternative 110

The higher speed of Alternative 110 would require more property acquisition to support straighter track, more grade separations and flatter terrain. The number of trips would be unchanged from that

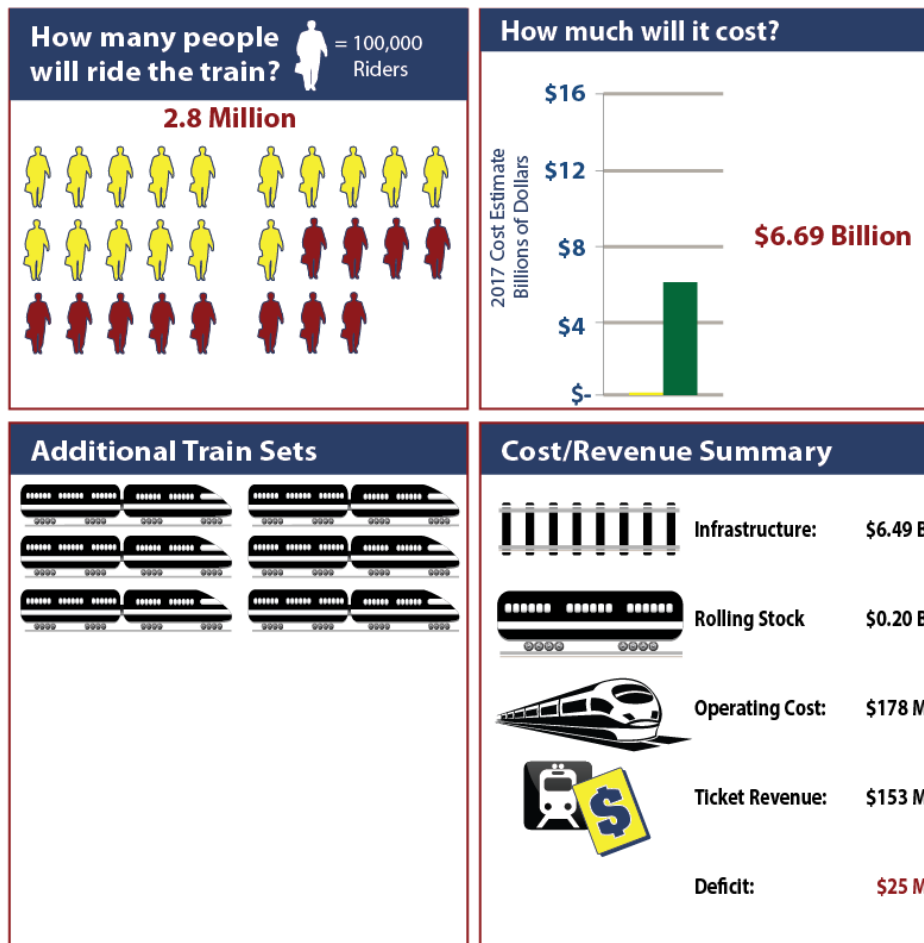
of Alternative 90B. While rolling stock costs would remain at six additional sets and \$0.20 billion, increasingly stringent track standards for the higher speed would involve \$6.49 billion in additional infrastructure, resulting in total capital costs of \$6.69 billion. Operating costs would increase only slightly, to \$178 million. Ridership would grow to 2.8 million in response to the higher speed, generating ticket revenues of \$153 million, and producing the smallest annual deficit among the five alternatives, \$25 million.

Alternative 110 is projected to be completed by 2035, and its maximum and average speed benefits would be achieved in steps, with approximately 25 percent of the benefit accruing at the end of each five-year interval, as each new segment of segregated track is completed.

Exhibit 5-11—Characteristics of Alternative 110



Alternative: 110 - What Does It Do?



Alternative 125

Increased service frequency, and the electrified ROW would require more and different equipment:

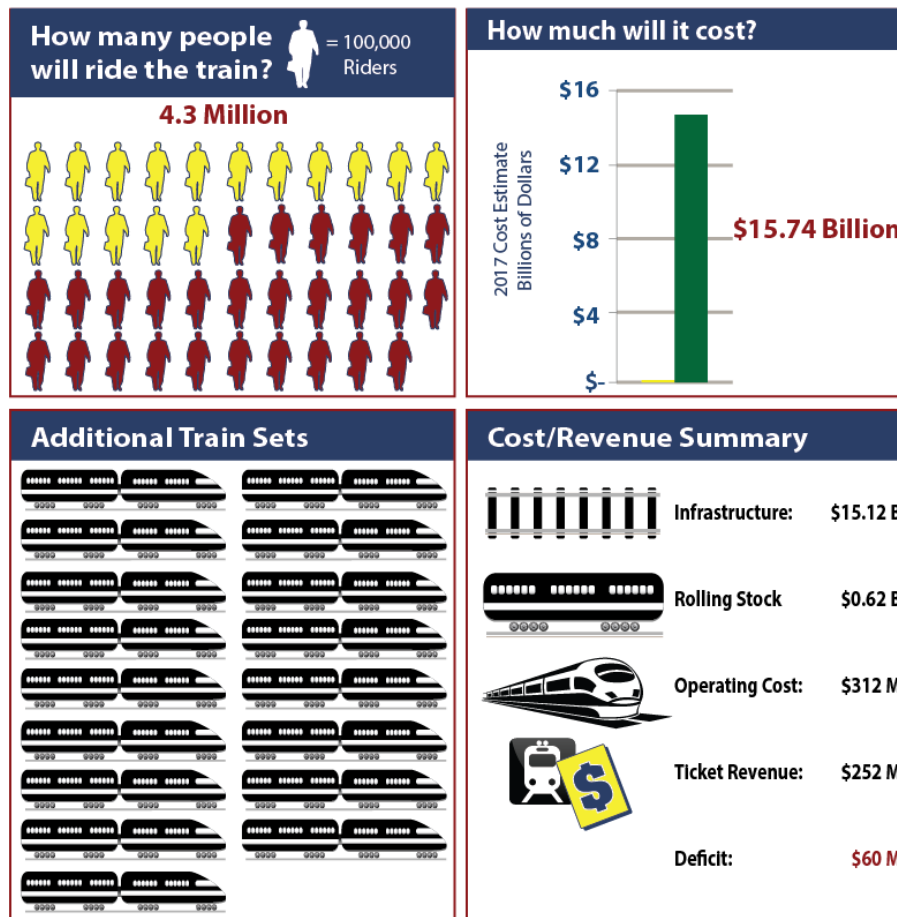
“dual-mode” diesel and electric locomotives in place of diesel-only locomotives. Alternative 125 would have a substantial increase in fleet size: 17 additional train sets would be required. The dual-mode locomotive fleet would have substantial costs, \$0.62 billion; and a new, fully segregated ROW would require an infrastructure investment of \$15.12 billion, for a total capital cost of \$15.74 billion. The increase in average speeds combined with increased service frequency on both segments and high-speed express service between major stops, would attract the highest additional ridership, forecast at 4.3 million and generating revenues of \$252 million annually. Operating costs for this increased level of service would be the highest of all the alternatives at \$312 million, producing an annual deficit of \$60 million.

Alternative 125 would not be completed until 15 to 20 years after the start of construction. An entirely new ROW between Albany and Syracuse, therefore, would not be completed until halfway through the construction period, and the first 50 percent of service benefits would therefore not accrue until then. The next 25 percent service benefit would accrue about five years later with completion of the new ROW to Rochester. The remaining 25 percent benefit would accrue when the new corridor reaches Buffalo.

Exhibit 5-12—Characteristics of Alternative 125



Alternative: 125 - What Does It Do?



5.6. Summary of Capital, Operating and Maintenance Costs, Revenues and Subsidies for Empire Corridor Alternatives

Exhibit 5-13 summarizes the capital and operating costs and revenues for each alternative to facilitate comparison.

Exhibit 5-13—Summary of Costs and Revenues for High Speed Rail Empire Corridor Alternatives

Alternative Metric	Base	90A	90B	110	125
Capital Costs*					
Additional train sets	0	6	6	6	17**
Equipment Cost	\$0.00	\$0.20	\$0.20	\$0.20	\$0.62
Infrastructure Cost	\$0.31	\$1.52	\$5.77	\$6.49	\$15.12
Total Capital Cost	\$0.31	\$1.72	\$5.97	\$6.69	\$15.74
Operating & Maintenance Costs					
O&M Cost (millions, 2017)	\$106	\$160	\$176	\$178	\$312
Revenue (millions)	\$79	\$122	\$143	\$153	\$252
Surplus/(Deficit)	(\$27)	(\$38)	(\$33)	(\$25)	(\$60)
Benefits					
2035 Ridership (millions annual one-way trips)	1.6	2.3	2.6	2.8	4.3
Ridership Gain vs. Base		0.7	1.0	1.2	2.7
Average Speed	51	57	61	63	77
Time, NYC – Niagara Falls (hours: minutes)	9:06	8:08	7:36	7:22	6:02
Time Improvement vs. Base (hours: minutes)	n/a	58	1:30	1:44	3:04
Round Trips Albany – Buffalo	4	8	8	8	19
Round Trips Albany – Niagara Falls	3	7	7	7	6
Round Trips NYC – Albany	13	16	17	17	24

*Costs in billions of 2017 year US dollars except where noted.

**Dual Mode locomotives required for Alternative 125

5.7. Funding Assumptions, Risks and Requirements

For the High Speed Rail Empire Corridor Program, it is assumed that a combination of federal high-speed rail funds and state and local revenue sources would be used for various infrastructure improvements and/or equipment purchases, as appropriate to funding source requirements and restrictions. Some of these funding sources would require local match. It is assumed that the state's

participation through some combination of local investments in stations or parking, the dedication of state bond funds, or direct subsidies from state general revenues could satisfy the local match requirements. At the Tier 1 level of analysis, and given the uncertainties associated with current high-speed rail funding, the rate at which federal funding will be provided for the program over the 20-year implementation period can only be estimated in broad terms, based on historical multi-year averages, adjusted for inflation.

All capital costs are shown as if they would be received in 2017. This allows for an appraisal of the relative capital costs of the program alternatives in total value, without regard for the rate at which funding would be available for the different alternatives.

5.7.1. Financial Capacity Analysis

NYSDOT's financial capacity to undertake major passenger rail improvement projects is constrained by limited resources and competing needs. Other NYSDOT major passenger rail improvement initiatives underway include participation in a wide range of capital investments required to maintain and improve rail transportation services in New York City and its Long Island and northern suburbs, as well as bus and rail rolling stock needs for other transit properties in the state's smaller municipalities. NYSDOT is also involved in improving statewide freight rail services in partnership with private freight rail owners. To a great degree, NYSDOT's capacity to advance high-speed rail improvements will depend on dedicated local funding sources and federal support.

5.7.2. Risk and Uncertainty and Risk Mitigation Strategies

Due to limitations associated with current funding sources, general budget pressures, and the need for continued maintenance of existing infrastructure, the pace of program implementation is difficult to project. Absent significant federal funding, NYSDOT currently has limited capacity to undertake major long-term investments in high-speed passenger rail projects. Moderate incremental investments are feasible within the context of existing and anticipated future funding. This Tier 1 financial analysis assumes substantial federal participation in the construction of any of the Build Alternatives. Furthermore, the federal programs outlined in Section 5.3.2 are primarily discretionary grants for capital improvements and related environmental and engineering studies, for which there is significant national competition.

NYSDOT has a history of providing operating support for inter-city and commuter rail transit, although there is no companion federal operating program. The financial analysis provided in Chapter 5 has defined a likely financial plan based on historic and potential future national funding trends. There are several operating and capital risks associated with the High Speed Rail Empire Corridor Program that would have to be addressed in formulating a detailed financial plan. Some additional fiscal capacity-related risks to NYSDOT and Amtrak are present as well. These risks are noted and described in the following subsections.

5.7.3. Capital Cost Risks

There remain considerable uncertainties in the capital cost estimates for the High Speed Rail Empire Corridor Program, due to the limitations noted earlier in this chapter. This uncertainty is not unusual at the Tier 1 conceptual planning level for a program of this magnitude. More refined cost estimates will be prepared during Tier 2, when the specific infrastructure improvements of the selected program alternative are advanced through detailed design. Exhibit 5-14 summarizes capital cost risks and Tier1-level mitigation strategies for the High Speed Rail Empire Corridor Program.

Exhibit 5-14—Summary of Tier 1 Capital Costs Risks and Mitigation

Risk	Mitigation
Negotiations with railroads. No provision is included for costs arising from negotiations with operating railroads regarding their potential contribution to capital, or potential costs involved in protecting freight crossings (necessary to permit high-speed passenger service) or the use of ROW based on sharing agreements.	<i>The uncertainty associated with costs of CSXT participation is a function of negotiations with CSXT. Subject to these negotiations, the broad 35% construction contingency factor accounts for this risk.</i>
Property costs. ROW acquisition costs are difficult to estimate in an uncertain commercial and residential real-estate market.	<i>As corridors are more precisely defined during Tier 2 work, it will be possible to sharpen the estimate for required property for the selected alternative.</i>
Broad unit costs (per ton, per cubic yard, per linear foot, etc.) have been applied for key elements rather than estimates based upon specific designs.	<i>During Tier 2 work on the selected alternative, as design detail is refined, costs specific to each element of infrastructure improvement will be more precisely defined.</i>
Mitigation costs. No allowances have been provided for utilities, wetlands mitigation, and preservation of historic structures, potential hazardous materials or other special site conditions.	<i>These uncertainties have been addressed to a considerable degree: the 35% contingency factor is applied to property acquisition as well as to construction; the engineering design/permitting cost category has been applied at 15%, rather than a more conservative 10-12% as is normally the case in standard construction. As the design becomes more refined, mitigation costs will be better defined and may be either more or less than the costs as accounted for in this Tier 1 analysis.</i>
Inflation rate. The rate of inflation is uncertain; moreover, inflation as represented in the consumer price index is not always representative of inflation for heavy construction or, more specifically, heavy rail construction, which tends to depend on competitive world-wide demand for concrete and steel at the time a project is designed and ready to bid.	<i>Application of a 35% contingency factor for both construction and property acquisition addresses this concern to a degree. It is virtually impossible, however, to forecast these factors beyond a 5-10 year time frame, so a 20-year program schedule is necessarily burdened with some additional risk.</i>
Financial market. Financial risks and interest rates may increase as capital markets respond to changes in the financial market and global economy. To the extent that project elements are funded by CSXT or through private-public partnerships involving debt, costs of debt service can vary dramatically.	<i>Government typically reserves low-interest debt programs through its economic development function. Where commercial debt becomes too costly, Government can sometimes guarantee debt, and thereby reduce its risk and associated costs, so that the debt-service costs can be maintained within reasonable ranges commensurate with these initial cost estimates.</i>
Federal participation. The level of federal participation may be lower than estimated.	<i>Because the High Speed Rail Empire Corridor Program constitutes a large number of individual infrastructure improvements, should federal funding be insufficient, the program could be implemented more slowly and over a longer time period, still delivering steady improvement in corridor rail service.</i>
Local participation. The level of local funding commitment may be lower than estimated.	<i>With sufficient public support, through referendum or bonding, it may be possible for NYSDOT to dedicate funding to the program to immunize it from the ebb and flow of local tax revenues and annual budgeting and legislative appropriations.</i>

At the Tier 1 planning level, it is difficult to anticipate and mitigate for these and other potential risks and uncertainties. During Tier 2, NYSDOT will further develop planning, analysis, and engineering design data for these alternatives. NYSDOT also will plan and conduct an appropriate public review process to generate support for the Preferred Alternative. The High Speed Rail Empire Corridor Program will then be positioned to compete effectively for federal, state, and private sector funding with which to initiate implementation.

5.7.4. Operating Cost Risks

As previously discussed, changes in fare structure affect ridership, with a resulting impact on fare revenue and cost recovery. Ridership affects service levels, which in turn affect maintenance and operating costs. Ridership and revenue are sensitive to on-time performance and to fare levels, which in turn affect the revenue forecasts and the operating ratio (the ratio of operating costs covered by fare revenues). Therefore, if the overall quality, speed, reliability, and availability of the new service would not meet customer demand, ridership could be lower than forecast, producing higher operating deficits and requiring additional state subsidies. Conversely, if the overall quality, speed, reliability, and availability of the new service would meet customer demand, ridership could be higher than forecast, resulting in lower operating deficits and requiring less state subsidies.

6. Comparison of Alternatives

6.1. Introduction

The Tier 1 Final EIS presents the final program of improvements selected by FRA and NYSDOT from the broad range of alternatives initially presented in the Tier 1 Draft EIS. This chapter summarizes and compares the five alternatives considered in this Tier 1 Final EIS and evaluates the alternatives' benefits, costs, and environmental and social impacts against the High Speed Rail Empire Corridor Program's purpose and need. Based on this evaluation, Alternative 90B has been identified as the Preferred Alternative that FRA and NYSDOT will advance towards implementation, following completion of the Tier 1 review process. The Preferred Alternative, Alternative 90B, will be advanced by the FRA and NYSDOT as a program of individual projects. Tier 2 environmental reviews will include more detailed analyses and design to identify site-specific environmental consequences, implementation plans, and mitigation measures.

6.2. Goals and Objectives

The FRA and NYSDOT developed program performance objectives and transportation-related goals based on the Program's purpose (to improve rail service) and needs (to reduce infrastructure constraints that impede service and to accommodate passenger and freight traffic demand), described in Chapter 1.

The environmental impacts of these alternatives are also more fully discussed in this Tier 1 Final EIS (in Chapter 4) and summarized below.

6.2.1. Performance Objectives

NYSDOT used the following six performance objectives to evaluate and rank the high-speed rail alternatives developed for the High Speed Empire Corridor Program.

- Improve system-wide on-time performance (OTP) to at least 90 percent;
- Reduce travel time along all segments of the Empire Corridor;
- Increase the frequency of service (number of daily round trips) along Empire Corridor West beyond the existing four daily round trips;
- Attract additional passengers;
- Reduce automobile trips, thereby reducing highway congestion; and
- Minimize passenger rail interference with freight rail operations.

6.2.2. Transportation-Related Goals

NYSDOT considered the following transportation-related goals important to the high-speed rail alternatives developed for the High Speed Rail Empire Corridor Program: increase travel choices and improve quality of life by providing additional commuting and travel options for residents and workers; contribute to economic revitalization by accommodating forecasted growth in population, employment, and corridor rail freight operations and by accommodating and attracting additional

tourists; and improve environmental quality by facilitating rail use and reducing reliance on automobile travel, thereby reducing fuel use and greenhouse gas (GHG) emissions.

The Tier I Final EIS document also includes analysis to weigh environmental impacts and costs for each alternative. These factors were important in selecting the Preferred Alternative.

6.3. Alternatives Assessment

This section presents a comparative assessment of the five program alternatives NYSDOT advanced for study in this Tier 1 Final EIS: Base Alternative, Alternative 90A, Alternative 90B, Alternative 110, and Alternative 125. The purpose of the comparative analysis is to highlight the advantages and disadvantages of the alternatives, to identify important distinctions among them, and to recommend a Preferred Alternative.

6.3.1. Base Alternative Performance

The Base Alternative, is carried through the Tier 1 EIS as the basis for evaluating and comparing the costs and impacts of the program alternatives in relation to the benefits gained by the public. The Base Alternative's specific elements represent a series of rail improvement projects that address previously identified capacity and speed constraints hindering the Empire Corridor rail service. The Base Alternative's projects would occur whether or not improvements in the four "Build" Alternatives discussed in this Tier 1 EIS advance. Since publication of the Tier 1 Draft EIS, seven of these eight have been completed or are in design.

The projects constructed under the Base Alternative represent an improvement over existing conditions. However, when compared to the Build Alternatives, the Base Alternative does not provide service improvements sufficient to satisfy the High Speed Rail Empire Corridor Program purpose of introducing higher passenger train speeds on the Empire Corridor and improving reliability, travel times, service frequency, and passenger amenities. The following are the key characteristics of the Base Alternative, relative to the Empire Corridor program's performance objectives and goals:

- **The Base Alternative would result in the lowest annual ridership of all the alternatives**, at 1.6 million (year 2035). All Build Alternatives significantly exceed this value.
- **The Base Alternative would have the slowest average speed** (51 mph) and longest trip time of all the alternatives (9 hours and 6 minutes between New York City and Niagara Falls).
- **The Base Alternative would not result in improved service frequencies.** The Base Alternative does not add any scheduled service. All other alternatives increase the number of daily trains operated compared to the existing service.
- **The Base Alternative would be the least effective alternative in diverting auto users to passenger rail** and improving air quality by reducing vehicular emissions. Per the analysis contained in this document, auto diversions increase in direct response to increased average speed, improved reliability, and reduced trip times among major origin/destination pairs.
- **Delivering only 83 percent on-time performance (OTP), the Base Alternative would not meet program service reliability goals of 90 percent OTP.** All of the other Build Alternatives would exceed the 90 percent OTP target.

6.3.2. Build Alternatives Performance

This section summarizes the effectiveness of the Build Alternatives in meeting the Empire Corridor program's goals and performance objectives. Exhibit 6-1 presents the qualitative rating system used to compare the Build Alternatives. Exhibit 6-2 summarizes the effectiveness of the alternatives in meeting the program's performance objectives using a qualitative rating system. The Base Alternative is shown for comparison.

Exhibit 6-1—Alternative Rating Symbols

Symbol	Rating
★	Strongly supports program performance objectives
+	Supports program performance objectives
–	Neutral regarding program performance objectives
X	Contrary to program performance objectives

Exhibit 6-2—Effectiveness of Alternatives in Meeting Performance Objectives

Performance Objectives	Base	90A	90B – Preferred Alt.	110	125 ¹	
Improve System-Wide On-Time Performance	X	★	★	★	★ (Express)	X (Regional)
Reduce Travel Time	–	+	+	+	★ (Express)	+ (Regional)
Increase Service Frequency	X	+	+	+	★ (Express)	+ (Regional)
Attract Ridership	–	★	★	★	★	
Reduce Automobile Trips	–	+	+	+	★	
Minimize Impact on Freight Rail Service	–	–	+	+	–	

Notes:

¹ Performance on the new express service and the legacy regional service will differ, as explained in the following subsections.

The findings regarding the performance of the Base and Build Alternatives reveal that:

- **Alternative 90A** strongly supports the performance objectives of improving system-wide on-time performance and attracting ridership. Alternative 90A also supports the objectives of

reducing travel times, increasing service frequency, and reducing automobile trips. Alternative 90A is neutral with regard to the objective to minimize adverse effects on freight train operations.

- **Alternatives 90B and 110** would both create a segregated rail corridor, by providing exclusive third and fourth tracks for use generally by passenger trains.¹⁵¹ These alternatives would both strongly support the goals of improving system-wide on-time performance and attracting ridership. These alternatives would also support the goals of reducing travel times, increasing service frequency, reducing automobile trips, and minimizing impacts on freight rail service.
- Benefits from **Alternatives 90A, 90B, and 110** all are realized soon after initiation of construction, with these benefits increasing steadily throughout the entire term of the program as track, signal, yard, and grade-crossing improvements continue to be implemented.
- **Alternatives 90A, 90B, and 110** all would enhance service for each station destination along the Empire Corridor West/Niagara Branch: Albany-Rensselaer, Schenectady, Amsterdam, Utica, Rome, Syracuse, Rochester, Buffalo-Depew, Buffalo Exchange Street, and Niagara Falls Stations.
- **Alternative 125** express service strongly supports the program performance objectives of improving system-wide on-time performance, reducing travel times, increasing service frequency, attracting ridership, and reducing automobile trips.

The regional service (legacy service) maintained along the existing Empire Corridor for Alternative 125 would support the goals of increasing service frequency and reducing travel time, but would be contrary to the goal of improving system-wide on-time performance. This alternative would result in passenger and freight trains continuing to share tracks, each potentially delaying the other. Alternative 125 would be neutral in terms of minimizing impact on freight rail service (it would be no worse; neither would it be improved). Alternative 125 would have an extremely high capital and annual operating cost, requiring the highest public subsidies (after the Base Alternative), and has the greatest potential for environmental and community impacts.

- **Alternative 125** would not be completed until 15 to 20 years after the start of construction, due to the need to construct an entirely new right-of-way through undeveloped areas, so the mobility benefits associated with Alternative 125 would not occur until then. The public would receive no transportation benefits from Alternative 125 until the first major new segment of track – from Albany to Syracuse – is completed. Even then, for travelers destined for Rochester or Buffalo/Niagara Falls, true high-speed service would not be available until this time or possibly later. During nearly the entire 20-year period of its implementation of Alternative 125, travelers would receive only the benefits available from the Base Alternative.
- **Alternative 125** does not provide service enhancements to several existing station destinations on the Empire Corridor West including: Schenectady, Amsterdam, Utica, Rome, and Niagara Falls. Benefits at these destinations are limited to the benefits described in the Base Alternative as the existing regional legacy service would still be provided.

Additional details on this evaluation are presented in the following subsections.

¹⁵¹ Passenger and freight trains will be able to use any track, depending upon dispatching priorities. It is anticipated, however, that normal schedules will tend to segregate freight and passenger trains on separate tracks as normal practice.

Improve System-Wide On-Time Performance

In 2019, Amtrak rated the on-time performance (OTP) for Empire Service between New York City and Albany as 91 percent of on-time customers (where customers arrive within 15 minutes), and the OTP for the full Empire Service operating between New York to Niagara Falls OTP was only 66 percent of on-time customers (a failing grade). Of the other routes operating on Empire Corridor, only the Ethan Allen Express received a passing OTP of 85 percent. The Adirondack had a 2019 customer OTP of 73 percent, and the Maple Leaf had an OTP of 67 percent. Exhibit 6-3 presents the estimated OTP for each alternative based on computer simulations of the year 2035 conditions (refer to Appendix D).

Exhibit 6-3—Estimated On-Time Performance, Albany – Niagara Falls, 2035

Alternative	Passenger Train OTP Percentage ¹	Qualitative Ranking
Base	83.0	X
90A	92.4	★
90B – Preferred Alt.	95.4	★
110	94.9	★
125 Express	100	★
125 Regional	83.0	X

Notes:

¹ Based on 10-minute lateness threshold, measured at terminal endpoints

Symbol	Rating
★	Strongly supports program performance objectives
+	Supports program performance objectives
–	Neutral regarding program performance objectives
X	Contrary to program performance objectives

All of the program Build Alternatives sustain or exceed the 90 percent OTP goal, even as both freight and passenger traffic grow over the implementation time frame. Only the Base Alternative fails to meet this objective. Computer simulation results for Empire Corridor West indicate that all four Build Alternatives would satisfy the 90 percent minimum OTP goal; these simulations accounted for CSXT traffic increases due to expanding future freight rail business in the corridor.¹⁵²

The 2035 Base Alternative has a projected OTP of 83 percent, while Alternative 90A has a projected OTP of 92.4 percent. Alternatives 90B and 110 have similar projected OTPs ranging from 94.9 percent to 95.4 percent. Alternative 125, which would run predominantly on new dedicated passenger rail ROW between Albany and Buffalo, is projected to have the best average OTP for destinations it serves including Albany-Rensselaer, Syracuse, Rochester, and Buffalo, at or near 100

¹⁵² As Amtrak's 2008 base numbers indicate, OTP south of Albany has been historically much better than OTP west of Albany, because of low freight traffic on Empire Corridor South.

percent. The legacy regional service continuing to serve destinations including Schenectady, Amsterdam, Utica, Rome, and Niagara Falls would continue to experience conflicts with freight operations in the Albany-Buffalo corridor, therefore remaining at the same OTP levels as the Base Alternative, 83 percent.

Reduce Travel Time Along all Segments of the Empire Corridor

NYSDOT evaluated the travel times between origins and destinations on the Empire Corridor associated with each alternative using a track and signal system computer simulation model. Simulated train runs were scheduled to avoid freight operations on shared tracks by the careful timing of passenger train arrivals at bypass tracks located to permit high-speed passenger trains to pass slower freight trains.

For Alternatives 90B and 110, NYSDOT added a second main track over longer segments between Albany and Buffalo to increase passenger track capacity and minimize track-sharing that mixed freight/passenger operations, thus increasing average speed. Exhibit 6-4 presents the estimated travel time for all alternatives.

Exhibit 6-4—Estimated Travel Times of the Alternatives, 2035

Alternative	Travel Time NYC	Estimated Time Savings	Percentage Time Savings over Base	Qualitative Ranking
Base	9:06	--	--	—
90A	8:08	0:58	11%	+
90B – Preferred Alt.	7:36	1:30	16%	+
110	7:22	1:44	19%	+
125 Express	6:02	3:04	34%	★
125 Regional	8:40	0:26	5%	+

Notes: Times presented in hours: minutes, based on westbound scheduled times

Symbol	Rating
★	Strongly supports program performance objectives
+	Supports program performance objectives
—	Neutral regarding program performance objectives
X	Contrary to program performance objectives

With respect to the Base Alternative, each of the Build Alternatives would result in a travel time savings of about 13 minutes between New York and Albany (Empire Corridor South). The Base travel time between these two points is assumed to remain constant because there are no committed capital improvements between New York and Albany that would result in significant scheduled travel time reductions. Alternative 90A would produce an overall corridor travel time savings of 58 minutes

between New York City and Niagara Falls compared to the Base Alternative. The time savings between New York City and Albany remains constant for Alternative 90A (and each of the Build Alternatives) at about 13 minutes. Alternatives 90B and 110 would produce larger time savings of one and one-half hours or more (1:30 and 1:44, respectively) compared to the Base Alternative. Most of this time savings would occur on the segment between Albany and Buffalo, although time saving percentages in Exhibit 6-4 reflect the entire trip travel time.

The Alternative 125 express service on a new corridor, including a transfer at Buffalo to regional or shuttle service on the existing Empire Corridor for the final leg of the trip to Niagara Falls, would provide a significant improvement of the average total Empire Corridor travel time from 9 hours and six minutes (9:06) under the Base Alternative to 6 hours and 2 minutes (6:02). It would shorten the trip by just over three hours for passengers traveling between New York City and Niagara Falls. For Alternative 125, the New York-Niagara Falls legacy regional service (serving all intermediate stations, including Schenectady, Amsterdam, Utica, and Rome) would experience only modest improvements in travel time over the Base Alternative, due to improvements along Empire Corridor South and the Niagara Branch. Travelers from New York using legacy service to non-express-stop cities would experience somewhat shorter travel times (about 13 minutes faster) and slightly, though not significantly, faster speeds than those available under the Base Alternative, again due to the slight improvements in speed and travel time along Empire Corridor South that are to be achieved under all alternatives.¹⁵³

The alternatives differ in terms of the range of train-by-train trip time improvements on the Empire Corridor. For the Base, 90B, 110, and 125 (both express and regional) Alternatives, most train trips have the same scheduled travel time over the course of the day. Alternative 90A differs in that it provides some limited stops service with faster trip times (3 round trips New York – Niagara Falls with one additional round trip Albany – Niagara Falls). Exhibit 6-4 presents average travel times between New York City and Niagara Falls. The trip times of Alternative 90A range from 7:50 to 8:30, with the overall average (Exhibit 6-4) of 8:08.

Increase Frequency of Service along Empire Corridor West

In 2019, there were four daily round trips provided between New York City and Niagara Falls. Eighty percent of New York State's 19.4 million residents live within 30 miles of the Empire Corridor. Recognizing the concentration of population and commerce along the Empire Corridor, the convenience of reliable and frequent rail service would contribute to the accessibility of communities along and near the corridor, enhancing their economic and cultural vitality and supporting local and regional economic development efforts. The proposed schedule enhancement for each alternative, including frequency of service and availability of express service trips, is presented in Exhibit 6-5.

Each of the Build Alternatives would enhance the service schedule that would be provided with the Base Alternative, which would continue to provide the same service as the existing Empire Service. Alternatives 90A and 125 would both offer some forms of express service, while Alternative 125 would also retain the existing regional service and service levels on the existing corridor. The average speeds and trip times achieved under Alternatives 90B and 110 are sufficiently improved such that all stations can be served by all trains.

¹⁵³ Due to the need to schedule regional services on the existing corridor to minimize conflicts with freight train services, it was not possible to design the Alternative 125 service to provide efficient "meets" between regional and express trains traveling the new 125 mph corridor at Albany, Rochester, Syracuse or Buffalo. Therefore, travelers on regional trains to/from Rome, Utica or Schenectady would not realize significant time savings by transferring at these "express" stations.

Exhibit 6-5—Schedule Enhancement by Alternative

Alternative	Frequency of Service		Available Express Service Trips (Included in total Albany – Buffalo trips)	Qualitative Ranking
	NYC – Albany	Albany – Buffalo		
Base	13	4	0	X
90A	16	8	4	+
90B – Preferred Alt.	17	8	0	+
110	17	8	0	+
125 Express	-	15	15	★
125 Regional	24	4	0	+

Symbol	Rating
★	Strongly supports program performance objectives
+	Supports program performance objectives
–	Neutral regarding program performance objectives
X	Contrary to program performance objectives

Alternative 90A would increase service between New York City and Albany to 16 round trips per day, a 23 percent gain above the current 13 trips in the Base Alternative. Service between Albany-Rensselaer Station and Buffalo would increase to 8 daily round trips, roughly doubling the current 4-trip service to Buffalo in the Base Alternative. With Alternatives 90B and 110, the frequency of service between New York City and Albany would increase to 17 round trips a day, representing a 30 percent gain as compared to the Base Alternative, and service between Albany and Buffalo, would double (to 8 round trips daily). With Alternative 125, service between New York City and Albany would increase to 24 round trips a day, approximately an 85 percent increase in service, and service between Albany and Buffalo would increase to 19 daily round trips, nearly four times the number of trips under the Base Alternative. Of those 19 daily trips, 15 would be added to the new 125 mph alignment, reconnecting with the existing alignment at Albany, Syracuse, Rochester, and Buffalo stations. As noted earlier, for Alternative 125, the existing 4 regional trains would continue on the existing alignment, serving all of the intermediate stations including Schenectady, Amsterdam, Utica, and Rome.

Increase Ridership

Over 1.4 million passengers rode on the Empire Corridor in FY 2011. Although rail ridership has

grown in recent years (with 2019 recording 1.6 million riders), passenger rail has the lowest market share of trips when compared to other available modes of transportation (automobile, bus and air). Automobile travel, particularly on I-87/I-90 (the New York State Thruway), comprises the majority of trips (roughly 211 million single-person trips in 2009). Therefore, even small percentage losses from autos translate into sizeable increases in rail ridership. The ridership for each alternative is shown in Exhibit 6-6.

Exhibit 6-6—Ridership by Alternative, 2035

Alternative	Total	Percentage Increase from Base	Qualitative Ranking
Base	1.6 million	-	—
90A	2.3 million	44%	★
90B – Preferred Alt.	2.6 million	63%	★
110	2.8 million	75%	★
125	4.3 million	169%	★

Symbol	Rating
★	Strongly supports program performance objectives
+	Supports program performance objectives
—	Neutral regarding program performance objectives
X	Contrary to program performance objectives

Analysis in this document projects ridership will increase by 16% with the Base Alternative compared to 2009 levels, with proportionally greater ridership gains anticipated with Alternatives 90A, 90B, 110, and 125. The largest increase in ridership would be achieved under Alternative 125 to a 2035 projected ridership of 4.3 million. However, given the lengthy timeline to implement Alternative 125, the benefit of this ridership gain will be significantly delayed compared to the other alternatives. All of the alternatives support the program objective of attracting ridership, with the four Build Alternatives performing significantly better than the Base Alternative.

The majority of ridership gains would occur in the New York City to Empire Corridor West markets, particularly between Albany and Buffalo/Niagara Falls. These increases reflect the response of travelers to the significantly increased service levels and reduced travel time between New York City and Empire Corridor West markets. New York City to Albany rail ridership would increase modestly over current levels, reflecting the already robust ridership and faster and more frequent service.

Reduce Automobile Trips

Experience demonstrates the relatively inelasticity of automobile travel, in which auto drivers do not typically switch to public transit without significant gains in travel time or reductions in cost. As

travelers' predominant concern is time, meaningful reductions in automobile travel are forecast due to the improved rail travel time resulting from higher average speeds (refer to Exhibit 6-4), increased flexibility in service (refer to Exhibit 6-5), and increased reliability of service (refer to Exhibit 6-3) that would result from the Build Alternatives. The anticipated diversion of automobile travelers to rail from the Base Alternative and corresponding reduction in automobile trips, is shown in Exhibit 6-7 based on the analysis performed for this document.

Exhibit 6-7—Annual Reduction in Auto Trips, 2035, Compared to Base Alternative

Alternatives	Diversion from Highways (one-way trips)		Qualitative Ranking ²
	Autos	One-Way Person Trips ¹	
Base	---	---	—
90A	84,209	126,313	+
90B – Preferred Alt.	139,519	209,279	+
110	177,603	266,404	+
125	485,078	727,616	★

Notes:

¹ estimated at 1.5 passengers/car

² based on 2035 estimate of total trips

Symbol	Rating
★	Strongly supports program performance objectives
+	Supports program performance objectives
—	Neutral regarding program performance objectives
✗	Contrary to program performance objectives

Reducing automobile trips may also reduce congestion along the New York State Thruway and other major highways. Each of the Build Alternatives would support the program's transportation-related goals of increasing travel choices, contributing to economic revitalization by accommodating population and employment growth forecasts, and improving air quality through the introduction of high-speed rail along the Empire Corridor.

Minimize Impact on Freight Rail Operations

Freight movements on Empire Corridor west, between Selkirk Yard in the Albany area and Buffalo, have historically been an impediment to the reliable operation of passenger rail services, and conversely, passenger service can also affect freight movements. Exhibit 6-8 presents an evaluation of the alternatives relative to their influence on freight train travel times. These travel times and delays were based on simulation of both passenger train and freight train movements (developed in

conjunction with CSXT) in the rail simulation (presented in Appendix D). The table shows that, even with increased freight and passenger volumes, delays for freight services are generally held at or improved over current levels.

The freight train operations with the Build Alternatives would operate the same as or better than the Base Alternative. Alternatives 90B and 110 would perform the best of the Build Alternatives with respect to impact upon future freight train operations. With Alternative 90B, freight train delay-minutes would decrease the most among all alternatives, improving 10 percent over the Base Alternative and 6 percent over Alternative 110, the second best Build Alternative.

Exhibit 6-8—Impact on Freight Train Operations, 2035

Alternative	Delay-Minutes per 100 Train Miles Operated (minutes: seconds)	Average Speed with Dwell* (mph)	Trip Times, Selkirk Yard to Buffalo (hours: minutes)	Trip Time Variability (hours: minutes)	Qualitative Ranking
Base**	36:19	30.3	8:14	1:37	—
90A	42:06	29.4	8:23	2:04	—
90B – Preferred Alt.	32:47	31.1	8:09	1:51	+
110	34:57	30.8	8:04	1:39	+
125	36:19	30.3	8:14	1:37	—

* Average speed with dwell for freight trains is the total trip time between start and finish, including time for handling freight cars at yards and customer sidings.

** The freight operating statistics for the Base Alternative include the delay reduction, average speed improvement, and trip time benefits of the Rochester third track improvements, an 11-mile project that no longer has committed capital funding. Therefore, it is anticipated that freight performance measures for the Base Alternative will be worse than shown. Preliminary testing indicates that eliminating this physical improvement from the Base Alternative but retaining it in all other alternatives (consistent with their definition in the EIS) results in 90A, 90B and 110 Alternative freight operating statistics that are superior to the Base. The freight operating statistics for the 125 Alternative are the same as those for the Base.

Symbol	Rating
★	Strongly supports program performance objectives
+	Supports program performance objectives
—	Neutral regarding program performance objectives
✗	Contrary to program performance objectives

Exhibit 6-8 also gives data on trip time variability, which is best explained by example. A train that is routinely 10 minutes late has very low trip time variability, while a train that may be on time one day and two hours late on another has very great trip time variability. Using this factor, it can be seen that the Base Alternative (as well as Alternative 125) would have the lowest trip time variability of all alternatives. Only a modest increase in trip time variability is projected for Alternative 110, while Alternatives 90A and 90B would have the highest trip time variability of the alternatives. Alternative 110 would have the most favorable combination of trip time and trip time variability of the

alternatives.

6.3.3. Comparison of Operational Performance and Costs

To select the Preferred Alternative, NYSDOT weighed and balanced costs and impacts against operational and mobility benefits. Exhibit 6-9 presents a tabular summary of performance measures for each alternative: service frequency, average speeds, travel times, time savings, on-time performance, and ridership. This exhibit also presents cost considerations, such as capital and operating/maintenance costs, revenues, deficits, cost-effectiveness, and subsidies, for all five alternatives.

Mobility can be measured in terms of improved passenger and freight movement as expressed by higher speeds and schedule frequency (for rail services), and improved reliability. A significant additional factor in judging relative appeal among the alternatives is how quickly their benefits could be available to travelers as, all else being equal, alternatives that yield benefits sooner are preferable. A synopsis of strengths and weaknesses of the alternatives from a cost and operational standpoint is presented in this section. Key findings shown in Exhibit 6-9 include:

- **Alternative 110 produces the greatest transportation benefits at the lowest per-rider cost subsidy at approximately \$9 per trip**, which would be 30 percent less than the next most cost-effective Alternative 90B (\$13 per trip) and just over 47 percent less than the Base Alternative value (\$17 per trip).
- **Alternative 110's relatively high ridership and moderate operating cost produces the highest recovery of costs through ticket sales**, 86 percent, compared to 81 percent for the next best alternatives (Alternatives 90B and 125) and a low of 75 percent for the Base Alternative.
- **Alternative 125 would produce the highest ridership; however, Alternative 125 would relegate travelers from Schenectady, Amsterdam, Utica, and Rome to the use of the existing regional train service on the existing corridor.** Moreover, because of limited train slots over Metro-North south of Poughkeepsie and schedule constraints on the Amtrak Empire Connector between Spuyten-Duyvil and New York City (on which both the high-speed and regional services would operate), there would be little value in transferring between regional and high-speed services at Albany-Rensselaer, Syracuse, Rochester or Buffalo. Therefore, the benefits of Alternative 125 would not be enjoyed by Schenectady, Amsterdam, Utica, and Rome passengers (even with a transfer), while the other Build Alternatives would confer benefits on all corridor rail riders.
- **Alternative 125 is the costliest alternative** at \$15.74 billion, it would cost more than twice as much as the next most costly alternative (Alternative 110).
- **The Base and 90A Alternatives have the lowest capital cost, but results in the fewest transportation benefits**, and fails in significant terms to achieve the program goals.
- **Alternative 125 would take the longest time to confer travel benefits in the Empire Corridor.** Because a new right-of-way must be assembled, acquired, constructed, and placed into service, no benefits would be available until the first major Albany-Syracuse segment can be completed, in approximately 15 to 20 years. Other alternatives begin conferring benefits within 2 to 5 years of the start of construction, with benefits continually increasing as additional improvements – signals, track, switches, grade crossings, and separations, bridges – are introduced in succeeding construction phases.

- **Alternatives 90B and 110 would provide the best future performance for freight rail operation in the corridor.** The other Build Alternatives would allow freight trains to operate as well as or better than the Base Alternative. Alternatives 90B and 110 would provide segregated tracks and would provide the greatest relief from potential future congestion delay. With Alternatives 90B and 110, freight train delay would decrease and average speeds would increase the most among all alternatives. Freight train travel time variability, a measure of service reliability, is expected to be similar across all five alternatives.

6.4. Summary of Environmental Benefits and Impacts

This section summarizes the potential impacts of the five alternatives on social, cultural, and environmental resources, and highlights key distinctions among them. Evaluations are based on conceptual designs and Geographic Information System (GIS) and file-based resource mapping, suitable for making corridor-wide, service-level determinations for the Empire Corridor. The quantitative extent of impacts of the Preferred Alternative, Alternative 90B, will be determined during Tier 2 evaluations and NEPA documentation, as specific projects, e.g., bridges, grade crossings, signal and track improvements, are advanced through design. Mitigation strategies presented in Chapter 4 of this Tier 1 EIS will also be further defined during Tier 2 evaluations.

Exhibit 6-10 compares the potential impacts of the alternatives using a relative rating system to distinguish the lowest (designated L) to highest (designated H) impact potential among the alternatives. A summary of the findings for all the social, cultural and natural resource categories discussed in Chapter 4 of this document is presented in Exhibit 6-13, at the end of this chapter.

Each alternative would affect the societal, cultural and natural environment differently. The Base Alternative would have the lowest potential for impact. Alternative 90A, consisting of 20 projects conducted largely within existing rights-of-way, would also be expected to have minimal impacts. Alternative 90B, the Preferred Alternative, would involve work extending outside of the right-of-way, and impacts would be even greater for Alternative 110, with track construction extending further outside of the right-of-way. Overall, Alternative 125 has the highest potential for impact of all the alternatives, with construction of a new segregated corridor and sections of elevated tracks where the railroad would extend over the existing Empire Corridor. If Alternative 125 had been selected for further consideration, design in Tier 2 would need to consider ways to further avoid and minimize impacts associated with this alternative.

Exhibit 6-9—Comparative Analysis of Alternatives

Evaluation Criteria	Alternatives				
	Base	90A	90B Preferred Alternative	110	125
Service Levels (In round-trips/day)					
Frequency of Service NYC to Albany	13	16	17	17	24
Frequency of Service Albany to Buffalo	4	8	8	8	15 (express) 4 (regional)
Frequency of Service Albany to Niagara Falls	3	7	7	7	6
Average Speed NYC to Niagara Falls (mph)	51	57	61	63	77 (express) 53 (regional)
Travel Time: (hrs.:min.) NYC to Niagara Falls	9:06	8:08	7:36	7:22	6:02 (express) 8:40 (regional)
Time Savings: Compared to Base Alternative (hrs.: min.)	-	0:58	1:30	1:44	3:04 (express) 0:26 (regional)
On-Time Performance	83.0%	92.4%	95.4%	94.9%	100% (express) 83.0% (regional)
Ridership (Annual One Way)					
Total (2035)	1.6 million	2.3 million	2.6 million	2.8 million	4.3 million
Increase as Compared to Base Alternative	-	0.7 million (44%)	1.0 million (63%)	1.2 million (75%)	2.7 million (169%)
Costs¹					
Capital Costs (Billions)	\$0.310	\$1.72	\$5.97	\$6.69	\$15.74
O&M Costs, Annual (Millions)	\$106	\$160	\$176	\$178	\$312
Revenue, Annual (Millions)	\$79	\$122	\$143	\$153	\$252
Total [Deficit]/Surplus (Millions)	[\$27]	[\$38]	[\$33]	[\$25]	[\$60]
Operating Ratio (percent O&M costs covered by revenue)*	75%	76%	81%	86%	81%
Cost Effectiveness (Annualized O&M Cost per Rider)	\$66.26	\$69.57	\$67.69	\$63.57	\$72.56
[Subsidy]/Surplus per Rider (rounded)	[\$17]	[\$17]	[\$13]	[\$9]	[\$14]

¹Capital Costs are in 2017 dollars

* Operating Ratio is the annual revenue as a percentage of the operating and maintenance costs. For Alternative 90B, the Preferred Alternative, this would be \$143 million/\$176 million = 81 %.

Exhibit 6-10—Comparison of Alternatives in Selected Impact Areas

Alternative/ Impact Area	Base	90A	90B – Preferred Alt.	110	125
Socioeconomic/ Land Use	L	L	M	M	H
Community	L	L	L	M	H
Historic	L	M	H	H	M ¹
Parks	L	L	L	M	H
Visual	L	L	M	M	H
Farmland	L	L	M	M	H
Waterbodies	L	M	M	M	H
Floodplains	L	L	M	M	H
Wetlands	L	L	M	M	H
Wildlife	L	L	M	M	H
Air Quality	L	B	B	B	B
Energy/ Greenhouse Gas	L	B-L	B-L	B-M	B-H
Noise/Vibration	L	M	M	M	H

L Potential for adverse effect is lowest among the alternatives

M Potential for adverse effect is moderate among the alternatives

H Potential for adverse effect is highest among the alternatives

B Long-term beneficial impact

¹ The undeveloped nature of the 125 Study Area may contribute to the lack of documented historic resources.

A brief overview of the environmental impacts of the alternatives is provided in the following section. Chapter 4 provides an environmental overview and comparison of the alternatives and details the social, cultural, and natural resource impacts of the Preferred Alternative, Alternative 90B. Appendix G provides more details on the environmental inventory and the social, cultural, and natural resource impacts of the other Build Alternatives. Exhibit 6-13 provides a more detailed summary on impacts of each alternative on each environmental resource category.

- **Socioeconomic Benefits:** The introduction of high-speed rail improvements is expected to generate considerable economic benefits as a result of improved passenger rail and freight operations. Major new infrastructure investments, such as improvements to high-speed rail service, could potentially change the population and employment outlook. For example, according to a U.S. Conference of Mayor's Report, which examined the impact of high-speed rail upon the City of Albany, the introduction of high-speed rail along the corridor can contribute substantially to economic growth by driving higher-density, mixed-use development at train stations; expanding visitor markets and generating additional spending; broadening regional

labor markets; and supporting the growth of technology clusters.¹⁵⁴ This effect would be more pronounced with Alternative 125, but substantial economic benefits would also accrue under Alternative 110 and the Preferred Alternative, Alternative 90B.

The additional tracks segregating freight and passenger service will not only accrue economic benefits from increased ridership, but will also benefit freight rail and movement of goods. Empire Corridor West represents one of CSXT's highest volume freight routes nationwide. The economic benefits associated with the project will extend to freight rail users and shipping companies, and the additional tracks will result in faster travel times and less delays for freight. This major freight corridor connects to the border crossing at Niagara Falls, an economically important gateway for international trade.

- **Land Use Impacts:** Alternative 125 would require the assembly and acquisition of public and private lands along the 280-mile Albany-to-Buffalo corridor. An estimated two to three thousand acres of land would be needed. Notwithstanding efforts to minimize adverse effects, the construction of an essentially sealed corridor with limited opportunities for crossings could be expected to have an impact on community cohesion and large-scale land uses which may be bisected by the high-speed rail corridor. If Alternative 125 had been selected for further consideration, additional location analyses would need to include avoidance and minimization of property impacts and impacts on sensitive land uses. By comparison, property acquisition requirements of the other alternatives that follow the existing Empire Corridor would be considerably less than that for Alternative 125. Alternative 110 would involve the next greatest property displacements, affecting approximately 53 areas in 8 counties. Property displacements with the Base and Alternative 90A are anticipated to be minimal.

The Preferred Alternative, Alternative 90B, would affect approximately 9 areas in 6 counties. Most of the land uses affected consist of agricultural, industrial, or wooded, undeveloped property, with limited residential or building impacts. The work may require relocation of Route 5 in Montgomery County, which could involve property impacts, and the addition of maintenance service roads could also involve property takings.

Indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable (e.g., growth inducing effects related to changes in the pattern of land use, and population density or growth rate). Of the alternatives evaluated, the Base and 90A Alternatives would involve the least indirect, growth-inducing impacts. Alternatives 110 and 125 would involve the greatest indirect impacts, with larger transportation benefits, and a greater degree of secondary development impacts. The Preferred Alternative would involve growth-inducing indirect impacts that would be greater than the Base and 90A Alternatives but would be more moderate than Alternatives 110 and 125.

- **Environmental Justice/Title VI Impacts:** The program of improvements under any of the alternatives is unlikely to result in disproportionately high and adverse impacts to minority and low-income communities, as well as populations protected under Title VI (Limited English Proficiency populations, disabled, and elderly).¹⁵⁵ Unlike the Base Alternative, all the Build Alternatives would provide increased transit options that would provide a benefit for the minority, low-income, and other disadvantaged communities. Alternative 90A and Alternative 90B, the Preferred Alternative, require less displacements and property impacts compared to Alternatives 110 and 125. Therefore, Alternatives 110 and 125 have a greater potential for

¹⁵⁴ Economic Development Research Group, Inc. *The Economic Impact of High Speed Rail and Cities and their Metropolitan Areas*. Prepared for the U.S. Conference of Mayors (undated), released June 2010.

¹⁵⁵ Due to the size of the program area, the identification of EJ/Title VI populations was performed at the county level, as well as identifying disadvantaged communities at the city level in the largest major metropolitan areas along the program area.

impacts on disadvantaged populations. The Tier 2 analysis will include a more detailed and refined evaluation of the environmental justice/Title VI impacts of the Preferred Alternative (Alternative 90B).

- **Community and Public Facility Impacts:** Alternative 125 has the potential to affect 13 community/publicly used facilities (including cemeteries, privately owned golf courses/golf clubs, and a school ballfield) in 8 counties largely where it extends on new right-of-way. If Alternative 125 had been advanced, additional location analyses would need to consider ways to avoid or minimize impacts on these publicly accessible facilities. By comparison, Alternative 110 is projected to have potential effects on 4 community facilities (e.g., fire stations, post office) in 1 county.

The Preferred Alternative and Alternative 90A are not expected to have any direct impacts to community facilities. Alternative 90B would not incur direct impact on community facilities, although the proposed work will adjoin several sites, including minor league baseball stadiums in Syracuse and Rochester, a college and state offices in Schenectady, and a cemetery in Schenectady County. Increased frequency of service could have the potential to incur additional visual and noise impacts from train passbys, however the additional trips represent a minimal increase over current rail traffic that includes frequent CSXT freight rail traffic. Relocations of adjoining roadways may indirectly affect community facilities (e.g., through property acquisition or changes in access), and would be better defined in Tier 2 including measures to avoid or minimize any adverse effects.

- **Historic and Archaeological Resource Impacts/Section 4(f) Uses:** As part of the Tier 1 corridor-level screening, the historic impact assessment defined Areas of Potential Effects as the area extending 100 feet from the track centerline for direct effects, to encompass all locations where project construction could occur, and 600 feet for indirect effects. The APE is defined as: *“the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties.”* Based on the defined Tier 1 APEs, Alternative 90B (the Preferred Alternative) could impact a greater number of identified archaeological/historic architectural resources compared to the Base Alternative, and Alternatives 90A and 125 (including NHLs, S/NR/listed and eligible individual resources and districts). Alternative 90B (the Preferred Alternative) could involve direct effects on approximately 154 archaeological/historic architectural resources, and indirect effects on an additional approximately 149 architectural resources due to construction-related activities. Notably, there are several rail bridges located within the right-of-way, which could be adversely affected by work proposed for this alternative. There could be additional adverse impacts to architectural resources because of the property acquisitions proposed for Alternative 90B.

Impacts for Alternative 110 would be roughly comparable to that for the Preferred Alternative, which would indirectly or directly affect 302 archaeological and architectural resources. However, Alternative 110 would likely involve greater impacts, with the location of proposed tracks 15 feet further than Alternative 90B. Alternative 90A is likely to have moderate effects, with 48 resources in the direct APE and an additional 52 resources within the indirect APE.

Alternative 125 would largely maintain elevated tracks within the existing ROW where it overlaps with the existing Empire Corridor, potentially affecting viewsheds that contain historic properties. Alternative 125 would therefore involve greater impacts than the Base or 90A Alternatives, potentially affecting 86 resources within the direct APE and an additional 36 resources within the indirect APE, depending on the footprint for the elevated structures that would carry the grade-separated tracks over the existing tracks. Alternative 125 would be developed along new right-of-way generally away from population centers where most historic structures are found. Due to the undeveloped nature of the areas bisected by Alternative 125,

historic and archaeological resources may not be fully documented for these areas. Alternative 125 would also have the greatest potential interaction with and use of tribal land.

- **Parks and Recreational Facilities Impacts/Section 4(f) Uses:** Alternative 125 has the greatest potential effect on parks and recreational facilities, with 10 such facilities in 6 counties potentially affected (including an Oneida Nation-owned golf course). If Alternative 125 had been advanced, the additional location analyses in Tier 2 would need to avoid or minimize impacts on these facilities to the extent practicable. The Base Alternative, Alternative 90A, and Alternative 90B (the Preferred Alternative) would have minimal impacts to parklands. These alternatives would largely involve work within the right-of-way, with tracks being added in the location of the former track beds or existing access roads. With the possible exception of two crossings of the Mohawk River and Erie Canal for Alternatives 90B (the Preferred Alternative) and 110, only Alternative 110 would have any other potential effect on recreational facilities, potentially affecting one county park.

The Preferred Alternative will involve adding tracks at two crossings over the Erie Canal. In Schenectady, trackwork would cross over the Mohawk River/Erie Canal on an existing bridge near a riverfront park and bike trail, but impacts to these recreational uses are not anticipated. The addition of additional tracks around Rochester Station will cross the Erie Canal and Erie Canalway Heritage Trail, but are not anticipated to directly affect parklands. The potential for impacts at the canal crossings will be evaluated as designs are advanced in the Tier 2 assessments.

- **Visual Impacts:** Alternative 125 would have the greatest potential for adverse visual impacts. Alternative 125 would create a new 100-foot-wide railroad right-of-way that would be electrified (with overhead catenary) in what are today largely open undeveloped and moderately developed areas. Alternative 125 would also create an elevated structure in densely populated urban centers (Syracuse, Rochester, and Buffalo), which would be more visible than the at-grade railroad. Alternative 90A would be entirely confined to the existing railroad right-of-way and is expected to have no such effects. Both Alternative 90B (the Preferred Alternative) and Alternative 110 would involve track construction extending outside of the right-of-way, which could result in additional clearing and property displacements, but which would otherwise result in minor visual effects.

Alternative 90B would involve minor visual changes as a result of the proposed addition of railroad tracks. This alternative would add new station buildings at Amsterdam and Buffalo-Depew stations, which could be expected to improve the appearance of these stations. Portions of Route 5, a scenic byway, would need to be relocated, but this would be relatively minor in nature. Three new flyovers would be added, which would be more visible, but these would be located at least several hundred feet from the nearest residences in either rural agricultural, lightly forested, or industrialized areas.

- **Farmlands Impacts:** Alternative 125 would have the most disruptive impact on farmland, potentially bisecting and isolating sections of prime farmlands and “farmlands of statewide significance” in 12 counties. By comparison, Alternative 110 would affect prime farmlands in at least 4 counties and Alternative 90B (the Preferred Alternative) would affect prime farmland soils in at least 3 counties. Alternative 90A has only minor effects on farmland, potentially affecting agricultural districts in only 1 county. The Base Alternative would not affect prime farmland.

The Preferred Alternative, Alternative 90B, would have minimal impacts to actively-farmed areas and little or no impacts to active farms. The proposed work will include the addition of track, as well as maintenance service roads in selected areas, which may affect areas of mapped prime

farmland soils and has the potential for minor encroachments on two areas within Agricultural Districts and actively farmed fields in Herkimer and Genesee counties.

- **Impacts on Waterbodies/Rivers:** Alternative 125 would have the greatest potential for impacts on waterbodies, potentially affecting 361 such resources along Empire Corridor West. The Base Alternative would have the least potential for impact on surface water resources—the Tier 1 Draft EIS documented 68 crossings¹⁵⁶ potentially affected by the construction of eight component projects. The other alternatives are anticipated to have moderate potential for impact relative to the other alternatives, with between 107 to 219 surface water crossings potentially affected by Alternative 90A, Alternative 90B (the Preferred Alternative), and Alternative 110, respectively. Although Alternatives 90B and 110 would cross a similar number of waterway crossings, Alternative 110 is expected to involve greater impacts due to its location 15 feet further from the existing railroad than the Preferred Alternative (for a total of 30 feet of separation).
- **Wetlands and Floodplains Impacts:** Alternative 125 would have the greatest potential for impact on wetlands relative to the other alternatives, with 513 new wetland crossings. Alternative 90B (the Preferred Alternative) and Alternatives 110 would have a moderate potential for impact, potentially affecting 454 to 473 wetland crossings. Alternative 90A would have a relatively minor potential for impact, potentially affecting 54 wetland crossings, and the Tier 1 Draft EIS documented, for the Base Alternative, proximity to 84 wetland crossings potentially impacted by the construction of eight component projects. Both the 110 and 125 Alternatives would involve greater potential for floodplain encroachments than the Preferred Alternative, which would have the potential for encroachments in 11 counties. The Base Alternative would involve minimal potential for impacts, and Alternative 90A would also have a lower potential for impacts, potentially affecting floodplains in 7 counties.
- **Coastal Resources Impacts:** The coastal zone and coastal resources with the potential to be impacted are the same for all alternatives: Hudson River, Great Lakes/Irondequoit Bay and Creek, and Lake Erie/Niagara River. All the Build Alternatives will involve bridgework in coastal areas along both Empire Corridor South and all but Alternative 90A will involve bridgework in coastal resources along Empire Corridor West.

The Empire Corridor crosses through 11 Significant Coastal Fish and Wildlife Habitats (SCFWHs) and 6 Scenic Areas of Statewide Significance (SASSs) in this area. Proposed work for the Base Alternative, Alternative 90A, and Alternative 90B within or adjoining these SCFWHs and SASSs along this corridor would not involve substantial impacts outside of the right-of-way and would not result in appreciable changes in visual quality, and no impacts to the scenic qualities of the SASSs are anticipated. The impacts of the other Build Alternatives are comparable to that of the Preferred Alternative.

- **Ecology and Wildlife Impacts:** Alternative 125 would have the potential to impact the greatest number protected resources/species, potentially affecting 87 federally or state-listed species, 92 significant natural communities, six bird conservation areas, two National Natural Landmarks (NNLs), and Essential Fish Habitat (EFH). Alternative 90B (the Preferred Alternative) and Alternative 110 would have a moderate potential for impact, potentially affecting more than 7 and 21 locations, respectively, but substantially fewer of these resources than Alternative 125. The 90/110 Study Area includes 72 listed species, 69 significant natural communities, six bird conservation areas, three NNLs, and EFH. Alternative 90A would have a relatively minor

¹⁵⁶ The Tier 1 Draft EIS analyzed the potential impacts of the eight component projects, seven of which have since been completed, and the eighth is under construction.

potential for impact, potentially impacting two locations, as well as EFH. The Base Alternative has the least potential for impact.

- **Air Quality Impacts:** Alternative 125 has the greatest potential benefit to air quality in some regions of the corridor (due to having the highest potential auto diversions), while it has the potential to adversely affect air quality in other regions of the corridor (the differences between the areas are a consequence of the distribution of on-road versus rail trips). The other alternatives would result in negligible changes in regional emissions, with the Base Alternative serving as the basis for comparison. While increased rail emissions would not adversely affect local air quality, some very minor local benefits may occur near roadways where trips are reduced. Some increases in pollutant concentrations may occur near rail stations as rail riders access stations by auto and bus, increasing as ridership increases from Alternative 90A to 90B, 110, and 125, which will be subject to further analysis in Tier 2.

Alternative 90B (the Preferred Alternative) would result in a small net air quality benefit on a regional scale, with a reduction in all pollutants other than NO_x.¹⁵⁷ The Preferred Alternative would result in a net reduction in 61 tons per year of carbon monoxide in the New York-Northern New Jersey-Long Island non-attainment area and 44 tons a year in the Syracuse area.

- **Energy and Greenhouse Gases Impacts:** The program would have beneficial impacts for greenhouse gas emissions (GHG) from permanently reduced annual on-road energy use and emissions as auto and bus riders switch to more energy-efficient and less polluting rail. This assessment compared these savings to energy and GHG emissions from construction. Alternative 125 is likely to require the greatest quantity of energy and materials for construction. Thus, it has the greatest potential to adversely affect net energy and greenhouse gases. Other alternatives have lesser adverse initial energy and emissions impacts in proportion to their lesser construction emissions impacts. The long-term impact of the alternatives on energy and emissions is ultimately always positive, as the on-road benefits persist year after year and eventually offset the initial construction impacts.

Alternative 90B (the Preferred Alternative) would result in a reduction of approximately 33,000 metric tons per year of greenhouse gas emissions.

- **Noise/Vibration Impacts:** The program would increase the number of Amtrak trains by 8 trains (or 4 roundtrips) on Empire Corridor South (along which Metro-North operates 50 to 77 roundtrips daily) or 6 to 8 trains (or 3 to 4 roundtrips) on Empire Corridor West (along which CSXT operates 50 to 60 daily roundtrips). Due primarily to noise from these other sources, under all alternatives, including the Base Alternative, potential noise impacts along the Empire Corridor/Niagara Branch are expected to be moderate to severe in more urbanized areas, between New York City and Schenectady, between Syracuse and Rochester, and between Buffalo and Niagara Falls. Alternative 125 has the potential for noise impacts in areas where no railroads currently operate. In this respect, it is the only alternative to introduce railroad noise in areas that are not already experiencing it. Noise impacts are also predicted along the three new alignment segments of Alternative 125. There is also a potential for vibration impacts along new corridor segments for Alternative 125.

The Preferred Alternative, Alternative 90B, will not increase noise levels over the Base Alternative between New York City and Schenectady, and the increases west of this point would be imperceptible (0 to 2 decibels).

- **Contaminated and Hazardous Materials Impacts:** The Base Alternative and Alternative 90A would incur the least amount of potential impacts, with risks primarily associated with the

¹⁵⁷ Even this increase in NO_x would be lower than the *de minimis* levels in the conformity regulations.

presence of contamination within the existing railroad right-of-way and nearby sites. Alternative 90B (the Preferred Alternative) and Alternative 110 would have a greater potential to encounter contaminated materials than the Base and 90A Alternatives, especially where new third and fourth track subsurface work would occur within highly developed urbanized areas. However, the Preferred Alternative would involve substantially less work extending outside of the right-of-way and less property acquisitions than Alternatives 110 or Alternative 125. Alternative 125 would incur the greatest risk of impacts as work includes all the improvements considered under Alternative 90A, as well as the extension of 236 miles of new track and alignment through rural, suburban, and urban areas. The new rail alignment would require numerous property acquisitions, increasing the potential for encountering contamination.

6.5. Identification of a Preferred Alternative—Alternative 90B

In the selection of Alternative 90B as the Preferred Alternative, NYSDOT considered the ability of each alternative to meet nine program performance objectives and transportation-related goals. The nine performance objectives and transportation-related goals were qualitatively rated and then scored using the numeric scoring shown in Exhibit 6-12. Applying this scoring to these nine objectives and goals yields the scores shown in Exhibit 6-11.

NYSDOT balanced the performance goals and transportation-related objectives against costs and environmental impacts and also considered the comments received on the Tier 1 Draft EIS.

The Base Alternative and Alternative 90A, while minimizing both costs and environmental impacts, do not meet project performance goals and objectives to the extent that the other Build Alternatives do. Total westbound travel times between New York City and Niagara Falls would be 9:06 and 8:08, respectively. For the most part, property takings for these alternatives would be minimal, with work confined to the existing right-of-way, but these alternatives would not provide the same increases in ridership, reductions in travel time, and improvements in on-time performance (OTP) as the other Build Alternatives. The other alternatives, Alternatives 110 and 125, would involve substantially greater costs and impacts compared to the Preferred Alternative.

6.5.1. Base Alternative

Overall, the Base Alternative would result in substantially lower ridership than the Build Alternatives at 1.6 million passengers (year 2035). The Base Alternative would have the slowest average speed (51 mph) and longest trip time of all the alternatives (9 hours and 6 minutes between New York City and Niagara Falls). While all other Build Alternatives would exceed the program service reliability goal of 90 percent OTP, the Base Alternative would deliver only 83 percent OTP. Unlike the Build Alternatives, the Base Alternative would not add any scheduled service and, therefore, would not result in improved service frequencies. The Base Alternative would be the least effective of all alternatives in diverting drivers to passenger rail and subsequently improving air quality by reducing vehicular emissions.

Exhibit 6-11—Scoring of Alternatives

Program Performance Objective/Transportation-Related Goal	Alternative									
	Base		90A		90B – Preferred Alt.		110		125	
	Qualitative Rating	Score	Qualitative Rating	Score	Qualitative Rating	Score	Qualitative Rating	Score	Qualitative Rating	Score
Improve System-Wide OTP to at Least 90%	X	-1	★	2	★	2	★	2	★	2
Reduce Travel Time	–	0	+	1	+	1	+	1	★	2
Increase Service Frequency of Service	X	-1	+	1	+	1	+	1	★	2
Attract Additional Passengers	–	0	★	2	★	2	★	2	★	2
Reduce Automobile Trips	–	0	+	1	+	1	+	1	★	2
Minimize Interference with Freight Rail Service	–	0	–	0	+	1	+	1	–	0
Increase Travel Choices and Improve Quality of Life	X	-1	+	1	★	2	★	2	+	1
Contribute to Economic Revitalization	X	-1	+	1	★	2	★	2	+	1
Improve Environmental Quality	–	0	+	1	★	2	+	1	X	-1
TOTAL	-4		10		14		13		11	

Exhibit 6-12—Alternative Scoring

Assessment	Symbol	Numerical Factor
Strongly supports program performance objectives	★	2
Supports program performance objectives	+	1
Neutral regarding program performance objectives	–	0
Contrary to program performance objectives	X	-1

6.5.2. Alternative 90A

Alternative 90A would result in an increase of 700,000 passengers annually over the Base Alternative, accommodating 2.3 million riders, with a travel time savings of 58 minutes between New York City and Niagara Falls. OTP would be 83 percent for the Base Alternative and 92.4 percent for 90A. Although costs would be lower for the Base and 90A Alternatives, at \$310 million and \$1.72 billion (in 2017 dollars), respectively, these alternatives have the poorest operating ratios (75%-76%) and cost-effectiveness of the alternatives considered, both requiring an annual subsidy per rider of \$17.

6.5.3. Alternative 125

Alternative 125 would attract the most passengers (4.3 million by 2035) and would perform the best in terms of travel times and frequency for the express service only (serving New York City, Albany, Syracuse, Rochester, and Buffalo). However, it would be the costliest and would have much larger property and environmental impacts. Although it would run on an exclusive corridor along Empire Corridor West, thereby minimizing direct interference with CSXT's heavily used freight corridor, it would not involve any improvements of the freight rail track system and would not result in reduced freight travel times, and, in this regard, would therefore be comparable to the Base Alternative. It would also not improve service to Schenectady, Amsterdam, Utica, Rome, and Niagara Falls, which would only be served by the existing regional, rather than express, service. Travelers on the express service destined for Niagara Falls would need to transfer at Buffalo/Depew Station for the last leg of the trip.

Alternative 125 is the costliest alternative, at \$15.74 billion (in 2017 dollars), it would cost more than twice as much as the next most costly alternative (Alternative 110). Alternative 125 would also take the longest time to confer travel benefits, due to the time required to assemble, acquire, and construct a new right-of-way. Other alternatives begin conferring benefits within 2 to 5 years of the start of construction, with benefits continually increasing as additional improvements – signals, track, switches, grade crossings, and separations, bridges – are introduced in succeeding construction phases. Two to three thousand acres of land would be needed to construct a sealed high-speed rail corridor between Albany and Buffalo, affecting properties, farms, wetlands, and, potentially, tribal lands (none of the other alternatives have the potential to affect tribal lands).

For Alternative 125, the annual subsidy per passenger would be lower than the Base Alternative's at \$14, but higher than that required for both the 90B and 110 Alternatives. More importantly, the estimated \$60 million additional operating and maintenance deficit that is required annually to support Alternative 125 is more than double the amount required for operating the Base Alternative. The total operating and maintenance costs for this increased level of service would be the highest of all the alternatives, at \$312 million, producing an annual deficit of \$60 million. By comparison, the annual deficit required to operate Alternative 90B is \$33 million.

6.5.4. Alternative 110

Alternative 110 would result in a westbound travel time between New York City and Niagara Falls that is approximately 1:44 minutes faster than the Base Alternative, and 14 minutes faster than Alternative 90B. Alternative 110 is projected to attract 2.8 million passengers in 2035, or 200,000 more passengers than Alternative 90B. This would be a gain of approximately 1.2 million passengers above projected ridership for the Base Alternative for Alternative 110. Alternative 110 would add approximately 384 miles of additional trackage, but the location of the new tracks 15 feet further from the existing tracks than Alternative 90B would result in considerably greater property impacts. Alternative 110 would involve the next greatest property displacements, affecting approximately 53 areas in eight counties.

While Alternative 110 would improve frequencies, travel times, and attract more passengers than Alternative 90B, the differences are relatively minor. When considering cost, however, at \$6.69 billion (in 2017 dollars), the capital cost of Alternative 110 would be 12 percent, or \$720 million, higher than Alternative 90B. Furthermore, the annual operating and maintenance (O&M) cost for Alternative 110 would be \$178 million; annual O&M costs for Alternative 90B would be \$2 million

less. However, Alternative 110 would have the lowest annual subsidy at \$9 per passenger, \$4 less than Alternative 90B.

Alternative 110 would not fully meet the goal of minimizing impacts to freight rail service because the passenger trains operating at a higher maximum speed would increase the potential for interference with freight trains. This is apparent in an estimated OTP for Alternative 110 (94.5%) that is below that of Alternative 90B. Alternative 110 also would have a higher level of freight delay than Alternative 90B.

6.5.5. Alternative 90B

The installation of approximately 370 miles of trackage, including additional third and fourth tracks, under Alternative 90B would add capacity and provide the ability to route passenger trains around freight trains even while passenger trains operate at higher speeds. Alternatives 90B and 110 would result in the lowest trip times for freight between Selkirk Yard, outside Albany, and Buffalo, with time savings of 5 and 10 minutes, respectively.

Moreover, Alternative 90B would have fewer environmental impacts than Alternative 110 (see summary of impacts in Exhibit 6-13). Alternative 90B would have land use impacts in nine areas in six counties, compared to 53 areas in eight counties with Alternative 110. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Because of the required property acquisition, Alternative 110 has significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance.

6.5.6. Preferred Alternative

Considering all the factors described in this chapter, Alternative 90B best meets the program purpose and need and best balances the program's benefits and effects. Therefore, NYSDOT has selected Alternative 90B as the Preferred Alternative. Alternative 90B:

- Attracts 2.6 million riders annually by 2035, a gain of 1 million passengers over the Base Alternative.
- Costs \$5.97 billion (in 2017 dollars), with annual O&M costs at \$176 million.
- Includes annual subsidy per rider of \$13, compared with \$17 for the Base Alternative.
- Reduces travel time to 7 hours and 36 minutes westbound between New York City and Niagara Falls; a time savings compared to Base Alternative of 1 hour and 30 minutes.
- Doubles service frequency, with 17 roundtrips per day to Albany and 8 roundtrips to Buffalo (an increase of four roundtrips for each leg over the Base Alternative)
- Includes the best OTP, at 95.4%.
- Involves the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

NYSDOT also considered public and agency inputs in the selection of the Preferred Alternative. NYSDOT received 1,754 comments from 932 commenters during the public comment period for the Tier 1 Draft EIS. There was broad support for a high-speed rail improvement program within the

Empire Corridor, with the overwhelming majority of commenters (83%) voicing their support. While federal agency comments focused on technical aspects of the program, the majority of elected officials, state, regional, local agencies, and tribes supported improvements to high-speed rail within the Empire Corridor. Approximately 95 percent of businesses and organizations and 80 percent of individuals supported the program improvements. Individuals and organizations tended to favor the higher speed alternatives (Alternatives 110 and 125) over the other Build Alternatives. Comments from railroads, including CSXT, the owner/operator of portions of the right-of-way (particularly Empire Corridor West), expressed concerns that the program might adversely impact freight operations. The railroads therefore favored the Base Alternative. The selection of Alternative 90B balances the preferences of these different constituencies.

Exhibit 6-13—Tier 1 Environmental Impact Assessment by Alternative

Area of Evaluation	Alternatives				
	Base	90A	90B – Preferred Alternative	110	125
Land Use	No impacts.	No impacts.	EC South: No impacts. EC West: Potential for 9 areas of land use impact in 6 counties.	EC South: No impacts. EC West: Potential for 53 areas of land use impact in 8 counties.	Existing Alignment: No impacts. New Alignment: Potential for 1 land use conversion required in EC South. Potential for extensive land use conversions of two to three thousand acres, including acquisition of structures, in 14 counties in EC West.
Regional Population, Employment and Business Districts	Little or no effect on population, employment and business activity.	Potential for minor increases in population, employment and business activity over the Base Alternative associated with passenger and freight service improvements.	Potential for greater increases in population, employment and business activity over Alternative 90A, especially in vicinity of station sites.	Potential for greater increases in population, employment and business activity over Alternative 90B, especially in vicinity of station sites.	Potential for greatest increases in population, employment and business activity over all other alternatives, especially in vicinity of Albany-Rensselaer, Syracuse, Rochester and Buffalo stations, and some stations in EC South. Because existing service with stops in Schenectady, Amsterdam, Utica, and Rome would be retained, little or no effect on regional population, employment and business districts would be expected.
Environmental Justice/Title VI (Analysis at county and major city levels)	Disproportionate adverse impacts unlikely.	Disproportionate adverse impacts unlikely. Long term benefit to urban areas anticipated.	Disproportionate adverse impacts unlikely. Long term benefit to urban areas anticipated.	Disproportionate adverse impacts unlikely. Long term benefit to urban areas anticipated.	Existing Alignment: Disproportionate adverse impacts unlikely. New Alignment: Disproportionate adverse impacts unlikely. Long term benefit to urban areas anticipated.

Exhibit 6-13—Tier 1 Environmental Impact Assessment by Alternative

Area of Evaluation	Alternatives				
	Base	90A	90B – Preferred Alternative	110	125
Community and Public Facilities	No impacts.	No impacts.	No impacts.	EC South: No impacts. EC West: Potential for impacts to 4 facilities in 1 county.	Existing Alignment: No impacts. New Alignment: No impacts in EC South. Potential for impacts to 13 facilities in 8 counties in EC West.
Historic and Cultural Resources/ Section 4(f) (Analysis of previously-identified resources)	Potential for effects on 24 archaeological and architectural resources within the direct/indirect Area of Potential Effect (APE).	Potential for effects to 100 resources located in direct/indirect APE.	Potential for effects to 303 resources located in direct/indirect APE.	Potential for effects to 302 resources located in direct/indirect APE.	New Alignment: Potential for effects to 122 resources located in direct/indirect APE.
Parks and Recreational Areas/Section 4(f)	No impacts.	No impacts.	Potential for impacts at crossings of the Mohawk River and Erie Canal will be evaluated in Tier 2.	EC South: No impacts. EC West: Potential for impacts at crossings of the Mohawk River and Erie Canal will be evaluated in Tier 2. Potential for impacts to 1 county park.	Existing Alignment: No impacts. New Alignment: No impacts in EC South. Potential for impacts to 10 parks in 6 counties in EC West.
Visual Resources	No impacts.	No impacts.	Potential for impacts associated with some forest clearing, land conversions, bridge modifications, proximity to adjoining properties.	Potential for impacts associated with some forest clearing, land conversions, bridge modifications, proximity to adjoining properties.	Existing Alignment: No impacts. New Alignment: Potential for impacts associated with new visual element, including new river/canal crossings, forest clearings, elevated track sections, and overhead catenaries. Potential for impacts associated with new corridor, including forest clearing, land conversions, proximity to adjoining properties.
Farmlands	No impacts.	EC South: No impacts.	EC South: No impacts.	EC South: No impacts.	Existing Alignment: No impacts.

Exhibit 6-13—Tier 1 Environmental Impact Assessment by Alternative

Area of Evaluation	Alternatives				
	Base	90A	90B – Preferred Alternative	110	125
		EC West: Potential for impacts to Agricultural Districts in 1 county.	EC West: Potential for impacts to prime farmland soils/ Agricultural Districts in at least 3 counties. ¹⁵⁸	EC West: Potential for impacts to prime farmland soils/ Agricultural Districts in 4 counties. ⁸	New Alignment: No impacts in EC South. Potential for impacts to multiple prime farmland soils, farmland soils of statewide significance and Agricultural Districts in 12 counties in EC West. ¹⁵⁹
Surface Waterbodies and Watercourses	Approximately 68 existing surface water crossings could be modified.	Approximately 107 existing surface water crossings could occur.	Approximately 219 existing surface water crossings could occur.	Approximately 218 existing surface water crossings could occur.	New Alignment: Approximately 248 new surface water crossings on new alignment and 113 crossings on existing rail (361 total) could occur.
Designated Wild, Scenic and Recreational Rivers	Three segments of the Hudson River are listed on the Nationwide Rivers Inventory (NRI), but no impacts are anticipated.	Three segments of the Hudson River are listed on the NRI, but no impacts are anticipated. A NRI-listed segment of the Black Creek crosses where a third track will be added, with potential for impact.	Three segments of the Hudson River are listed on the NRI, but no impacts are anticipated. A NRI-listed segment of the Black Creek crosses where a third track will be added, with potential for impact.	Three segments of the Hudson River are listed on the NRI, but no impacts are anticipated. Two NRI-listed segments of the Black Creek crosses where a third and fourth track will be added, with potential for impact.	Three segments of the Hudson River are listed on the NRI, but no impacts are anticipated.
Navigable Waters	EC South: No impacts. EC West: 2 existing crossings over navigable waters could be modified, with potential for impacts.	EC South: 4 existing crossings over navigable waters could be modified, with potential for impacts. EC West: 1 existing crossing over a navigable water could be modified, with potential for impacts.	EC South: 4 existing crossings over navigable waters could be modified, with potential for impacts. EC West: 11 existing crossings over navigable waters could be modified, with potential for impacts.	EC South: 4 existing crossings over navigable waters could be modified, with potential for impacts. EC West: 11 existing crossings over navigable waters could be modified, with potential for impacts.	New Alignment: new Hudson River crossing over navigable waters would occur in EC South, with potential for impacts. 4 new crossings over navigable waters would occur in EC West, with potential for impacts.
Floodplains	EC South: Minimal potential for impacts.	EC South: Potential for impacts to flood prone areas. EC West: Potential for floodplain	EC South: Potential for impacts to flood prone areas. EC West: Potential for floodplain	EC South: Potential for impacts to flood prone areas. EC West: Potential for floodplain	New Alignment: Potential for impacts to flood prone areas in EC South. Potential for floodplain impacts

¹⁵⁸ This is in addition to Alternative 90A impacts.¹⁵⁹ This is in addition to Alternative 90A impacts along Empire Corridor South and Niagara Branch.

Exhibit 6-13—Tier 1 Environmental Impact Assessment by Alternative

Area of Evaluation	Alternatives				
	Base	90A	90B – Preferred Alternative	110	125
	EC West: Potential for impacts to 11 areas.	impacts in 7 counties.	impacts in 11 counties.	impacts in 11 counties, including more encroachment than Alternative 90B.	in 11 counties and additional areas in 3 counties in EC West.
Wetlands	EC South: Potential for impacts involving 78 existing crossings. EC West: Potential for impacts involving 6 crossings.	EC South: Potential for impacts involving 39 new and existing crossings. EC West: Potential for impacts involving 15 existing crossings.	EC South: Potential for impacts involving 39 new and existing crossings. EC West: Potential for impacts involving track addition at 454 crossings.	EC South: Potential for impacts involving 39 new and existing crossings. EC West: Potential for impacts involving track addition at 473 crossings.	New Alignment: Potential for impacts involving 513 new crossings.
Coastal Resources	EC South: Work will occur within the coastal zone. Of the six SASSs and 11 SCFWHs, no impacts are anticipated. EC West: Limited work within coastal zone.	EC South: Work will occur within the coastal zone. Potential for impacts in EC South associated with new bridge construction in coastal zone. Of the six SASSs and 11 SCFWHs, no impacts are anticipated. EC West: Limited work within coastal zone.	EC South: Work will occur within the coastal zone. Potential for impacts in EC South associated with new bridge construction in coastal zone. Of the six SASSs and 11 SCFWHs, no impacts are anticipated. EC West: Bridgework has potential to affect one coastal area and SCFWH.	EC South: Work will occur within the coastal zone. Potential for impacts in EC South associated with new bridge construction in coastal zone. Of the six SASSs and 11 SCFWHs, no impacts are anticipated. EC West: Bridgework has potential to affect one coastal area and SCFWH.	Existing Alignment: No impacts. New Alignment: Potential for impacts in EC South associated with new bridge construction in coastal zone. EC West: Bridgework has potential to affect one coastal area and SCFWH.
Aquifers	No impacts.	EC South: No impacts. EC West: Potential for minimal impacts to primary aquifer depending upon construction and excavation depths.	EC South: No impacts. EC West: Potential for impacts to primary and/or principal aquifers underlying 9 counties.	EC South: No impacts. EC West: Potential for impacts to primary and/or principal aquifers underlying 9 counties.	Existing Alignment: No impacts. New Alignment: Potential for impacts to principal aquifer in EC South depending on new bridge construction and excavation depths. Potential for impacts in EC West to primary and/or principal aquifers underlying 13 counties.
General Ecology and Wildlife Resources/Threatened	EC South: No impacts. EC West: Potential for impacts to 1 conservation area	EC South: Potential for impacts to essential fish habitat (EFH), aquatic species and habitat associated	EC South: Potential for impacts to EFH, aquatic species and habitat associated with Livingston	EC South: Potential for impacts to EFH, aquatic species and habitat associated with Livingston	New Alignment: Potential for impacts to EFH in EC South. Potential for impacts to 87 species, 92

Exhibit 6-13—Tier 1 Environmental Impact Assessment by Alternative

Area of Evaluation	Alternatives				
	Base	90A	90B – Preferred Alternative	110	125
and Endangered Species	and protected resources/species.	with Livingston Avenue Bridge replacement. EC West: Potential for impacts at 2 locations associated with vegetation removal.	Avenue Bridge replacement. EC West: Potential for impacts at 7+ locations, including National Natural Landmarks (NNL)/bird conservation area, 8 significant natural communities, 46+ protected resources/species.	Avenue Bridge replacement. EC West: Potential for impacts at 21+ locations, including 2 NNLs, bird conservation area, 8 significant natural communities, 46+ protected resources/species.	significant natural communities, 6 bird conservation areas, and 2 NNLs in EC West associated with habitat conversion and fragmentation.
Critical Environmental Areas	No impacts anticipated.	No impacts anticipated.	No impacts anticipated.	No impacts anticipated.	Existing Alignment: No impacts anticipated. New Alignment: No impacts anticipated.
Air Quality	Baseline condition.	Potential for reduction in all pollutants other than NO _x . The minor increase in NO _x would conform to regulations.	Potential for greater reduction in all pollutants other than NO _x over Alternative 90A. The minor increase in NO _x would conform to regulations.	Potential for greater reduction in all pollutants other than NO _x over Alternative 90B. The minor increase in NO _x would conform to regulations.	Existing Alignment: No effect. New Alignment: Potential for greater reduction in all pollutants other than NO _x over Alternative 110. The minor increase in NO _x would conform to regulations.
Energy and Climate Change	Baseline condition.	Potential for net decrease in annual energy use and greenhouse gas (GHG) emissions over Base Alternative. Requires smallest quantity of energy and materials for construction.	Potential for greater decrease in annual energy use and GHG emissions over Alternative 90A by approximately 20%. Requires relatively small quantity of energy and materials for construction.	Potential for greater decrease in annual energy use and GHG emissions over Alternative 90B by approximately 2%. Requires second largest quantity of energy and materials for construction.	Potential for greater decrease over 110 in annual energy use (by 42%) and GHG emissions (by 27%). Requires greatest quantity of energy and materials for construction.
Noise and Vibration	Potential noise impacts from existing rail traffic (including freight and commuter rail) in more urbanized areas, between New York City and Schenectady, between Syracuse	Potential noise impacts from existing rail traffic (including freight and commuter rail) in more urbanized areas, between New York City and Schenectady, between Syracuse	Potential noise impacts from existing rail traffic (including freight and commuter rail) in more urbanized areas, between New York City and Schenectady, between Syracuse	Potential noise impacts from existing rail traffic (including freight and commuter rail) in more urbanized areas, between New York City and Schenectady, between Syracuse	Existing Alignment: Potential noise impacts from existing rail traffic (including freight and commuter rail) in more urbanized areas, between New York City and Schenectady,

Exhibit 6-13—Tier 1 Environmental Impact Assessment by Alternative

Area of Evaluation	Alternatives				
	Base	90A	90B – Preferred Alternative	110	125
	and Rochester, and between Buffalo and Niagara Falls. Potential for vibration impacts from these existing sources.	and Rochester, and between Buffalo and Niagara Falls Potential for vibration impacts from these existing sources.	and Rochester, and between Buffalo and Niagara Falls Potential for vibration impacts from these existing sources.	and Rochester, and between Buffalo and Niagara Falls Potential for vibration impacts from these existing sources.	between Syracuse and Rochester, and between Buffalo and Niagara Falls New Alignment: Potential for noise impacts on new alignment segments and elevated sections. Potential for vibration impacts along length of new alignment.
Contaminated and Hazardous Materials	No impacts anticipated for track improvements. Potential for impacts associated with station improvements.	No impacts anticipated for track improvements. Potential for impacts associated with station improvements and bridge replacement.	No impacts anticipated for track improvements. Potential for impacts associated with station improvements, bridge replacement, new ROW in 7 locations, and new structures in urban areas.	No impacts anticipated for track improvements. Potential for impacts associated with station improvements, bridge replacement, new ROW in 18 locations, and new and existing structures in urban areas.	Existing Alignment: No impacts anticipated for track improvements. Potential for impact associated with station improvements. New Alignment: Potential for impacts associated with new bridge construction in EC South and extensive property acquisitions in EC West, including numerous structures.
Notes: 1. EC South – Empire Corridor South; EC West – Empire Corridor West 2. The potential areas of impact described in this Tier 1 EIS are preliminary and are based on GIS resource data. The actual extent of impact will be determined during Tier 2, following more detailed investigation and design.					

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7. Comments and Coordination

7.1. Introduction

This chapter provides an overview of the public involvement and agency coordination activities that have been completed to date as well as the process in which all activities have been carried out. The public involvement and agency coordination task of the program is to invite participation by, and coordination with, the appropriate federal, state, and local agencies as well as the public in an effort to engage and inform these stakeholders throughout the environmental review process. NYSDOT designed the public involvement program to be an inclusive and transparent process that adheres to the requirements of the National Environmental Policy Act (NEPA).

The selection of the Preferred Alternative and the alternatives analysis performed for the Tier 1 Final EIS incorporated inputs from the public, agencies, and stakeholders. The program's multifaceted public involvement plan utilizes several mediums to engage and inform the public and other key stakeholders. NYSDOT developed a Public Involvement Plan (PIP) for the program, and it outlines the public involvement activities and identifies key contacts from targeted groups such as government agencies and organizations, public offices, non-government organizations, special interest groups, civic and business groups, present and potential riders/users, the media and the general public. In addition, the PIP identified NEPA cooperating and participating agencies (refer to Exhibit 7-6) that were invited. The PIP also outlines how public involvement activities are linked to key program milestones and identifies the mediums to be used in engaging program stakeholders.

NYSDOT has planned and developed the public involvement activities outlined in the PIP and carried out at key program milestones in close collaboration with program partners, including staff from the lead agencies, as well as with input from cooperating and participating agencies.

7.2. Program Identifier

At the program's commencement, NYSDOT created a logo to give the program a unique and consistent identity. The logo (refer to Exhibit 7-1) is prominently featured on all forms of program communication with the public and at public meetings. The logo incorporates the official program name along with the name of the program sponsor, the New York State Department of Transportation.

Exhibit 7-1—Program Logo



7.3. Public Outreach

7.3.1. Stakeholder Mailing List

NYSDOT developed and maintains a stakeholder database for the program. The stakeholder database includes contact information of all interested stakeholders as well as representatives from all the agencies and organizations involved in the program. NYSDOT updates the database regularly as the program progresses and as additional interested parties request to be added to the mailing list. Currently, the stakeholder database contains approximately 500 contacts.

7.3.2. Media Outreach

The program includes a media outreach plan which includes preparing press releases, meeting notices, and general program-related outreach releases for dissemination by local media channels in each of the six major population centers along the Empire Corridor. In addition, NYSDOT held press briefings prior to each of the public scoping meetings in an effort to promote public awareness of the program and encourage public participation and input. The press briefings also provided the media with the opportunity to interview members of the program team.

7.3.3. Newsletters

Since the onset of the program, NYSDOT has produced and distributed three informational newsletters to stakeholders at key program milestones. The first newsletter (October 2010) provided a general overview of the program's purpose and advertised the public scoping meetings in an effort to promote attendance at the scoping meetings. The second newsletter (May 2011) provided an overview of the comments received at the public scoping meetings and throughout the duration of the scoping period and presented initial analysis and findings from the scoping period. The third newsletter (March 2012) provided an overview of the alternatives development and screening process and identified the alternatives being advanced for detailed evaluation.

Program newsletters were uploaded to the program website at www.dot.ny.gov/empire-corridor/ and were distributed to all contacts listed in the stakeholder mailing list. The stakeholder database is comprised of over 500 participants representing a variety of businesses, and governmental and non-governmental organizations. Represented entities included, among others, federal, state, regional, and local government officials and legislators (including a member of U.S. Congress, New York State Senate and Assembly, Monroe County Legislature, etc.); transit agencies and metropolitan planning organizations (Metro-North Railroad, Amtrak, Canadian Pacific Railway, Capital District Transportation Authority, Central New York Regional Transportation Authority, etc.); and development agencies and organizations (Greater Syracuse Economic Growth Council, Empire State Development Corporation, Saratoga Economic Development Corporation, etc.).

7.3.4. Program Website

NYSDOT developed the program website (refer to Exhibit 7-2) at the onset of the program to provide interested parties continuous access to information about the program. The website is accessed at:

<https://www.dot.ny.gov/empire-corridor>. Throughout the course of the program, NYSDOT has encouraged interested parties to visit the program website to learn more about the program and receive the latest information and updates.

Exhibit 7-2—Program Web Site Home Page



The program website includes a general overview of the program, the process in which the program is being carried out, and an explanation of the program's purpose and need and goals and objectives. The website contains several links where interested parties can learn more about the program by reading the latest issue of the program newsletter, reviewing an online briefing about the program

and the alternatives under analysis, watching an informational video about the program and exploring the interactive alternatives table. The program website also contains information pertaining to schedule, upcoming and past public outreach activities, and frequently asked questions about the program. In addition, several program reports and documents as well as past issues of the program newsletter have been archived on the website and are available for download. The program website also has a page dedicated to informing interested parties how they may contact a member of the program team, submit a comment or question and sign up on the program mailing list to receive upcoming program information.

The public involvement materials posted on the program website were specifically developed to engage and inform as many stakeholders and members of the public as possible, given that the Empire Corridor stretches across New York State, a distance of 464 miles. The website allows for stakeholders to receive the latest program related information even if they are unable to travel to attend a live meeting in person. The website received over 3,000 unique hits within the first couple of months of being launched. To date, the website has been viewed by nearly 14,231 unique visitors.

7.4. Public Scoping Process

7.4.1. Public Scoping Meetings

Given the length of the Empire Corridor, six public scoping meetings were held in major population centers located along the corridor: New York City, Albany, Utica, Syracuse, Rochester and Buffalo (see Exhibit 7-3). The public scoping meetings were advertised to the general public in accordance with the program's media outreach plan. Meeting notices and press releases were produced and sent to various media outlets in each of the six locations along the length of the corridor where public scoping meetings were held. These media announcements were published in each of the six areas in advance of the scoping sessions in October and November of 2010. In addition, the first newsletter for the program announced the holding of the scoping meetings and was forwarded to the entire program mailing list. The program website also advertised the scoping meetings.

Invitations to public scoping meetings were included in letters sent to potential cooperating agencies. Exhibit 7-6 identifies the 13 agencies at the federal and state level that were invited to attend.

Invitations to the public scoping meeting were included in letters sent to potential participating agencies. Exhibit 7-6 identifies the 21 agencies at the federal, state, and regional level invited to attend.

Invitations to the public scoping meetings were also included in letters sent to potential members of the Empire Project Advisory Committee (EPAC). Over 50 individuals were invited from federal, state, and local agencies and organizations, and railroads/transportation agencies and groups (see Exhibit 7-7).

The public scoping meetings were conducted in an open house format from 5:30-7:30 p.m. at each location. NYSDOT asked attendees to sign-in, distributed copies of the program newsletter and a comment form, and encouraged attendees to view an informational video on the program. At the end of the video, attendees were encouraged to view easel mounted display boards that presented program information and to interact with members of the program team. NYSDOT encouraged

meeting attendees to fill out a comment card and leave it in one of the many drop boxes located at each public meeting.

In addition to the six public scoping meetings, an online scoping briefing was created and posted on the program website for the benefit of interested parties unable to attend a public scoping meeting in person. The online scoping briefing contained the same information presented at the public scoping meetings in a downloadable electronic format. The online scoping briefing was a very successful public outreach tool that was visited by 231 unique individuals during the scoping period.

Exhibit 7-3—Scoping Meetings

Meeting Date	Meeting Location	Estimated Attendance
Tuesday, October 19, 2010	Connecticut Street Armory 184 Connecticut Street Buffalo, New York 14213	81
Wednesday, October 20, 2010	Empire Expo Center (Syracuse Fairgrounds) 581 Fair Boulevard Syracuse, New York 13209	28
Tuesday, October 26, 2010	Sand Creek Middle School 329 Sand Creek Road Albany, New York 12205	86
Wednesday, October 27, 2010	Moynihan Station 380 West 33 rd Street New York, New York 10001	34
Tuesday, November 9, 2010	Hotel Utica 102 Lafayette Street Utica, New York 13502	23
Wednesday, November 10, 2010	Monroe Community College 1000 East Henrietta Road Rochester, New York 14623	87
TOTAL:		339

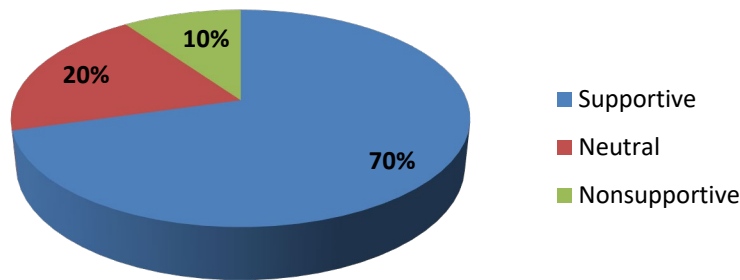
During the program scoping process in 2010, the public and other program stakeholders expressed interest in the potential for higher speed alternatives. These included a 160 mph alternative representing the practical upper limit of electrified dynamic tilt trains, such as the Amtrak Acela; and a 220 mph alternative representing the practical upper limit of high-speed rail operations seen in France, Germany, Spain, Japan, and China. In response to this, NYSDOT examined a range of higher speed alternatives according to the same metrics as the other alternatives.

7.4.2. Public Scoping Comments

The public scoping meetings held during the fall of 2010 solicited a total of 102 public comments that were collected and recorded during the scoping period. Several options for submitting comments were available to the public, which included: direct submission at the public scoping meetings, standard mail, e-mail, through the program website and via telephone.

Based on the public comments received during the scoping period, the majority (70%) of commenters expressed support for the program, as illustrated in Exhibit 7-4.

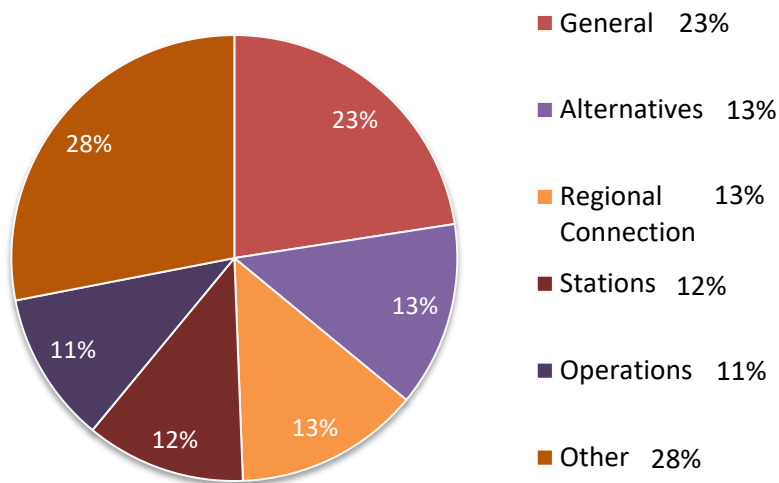
Exhibit 7-4—Nature of Public Comments



NYSDOT documented and categorized public comments received at the public scoping meetings as well as from email, standard mail and phone, to provide a general summary of the comments received during the public scoping process. NYSDOT grouped the comments into 12 different categories based on the subject of the comment. The 12 categories include: general, alternatives, regional connections, stations, operations, alignment, speed, intermodal, vehicles, scoping meetings, safety and ridership. It is important to note that a comment made by one individual may be broken out into multiple categories; numerous comments addressed more than one subject category. Exhibit 7-5 illustrates the breakdown of comments received by category from public scoping efforts conducted throughout the corridor.

The majority of comments received were categorized as the following: general, alternatives, regional connection, stations and operations. The remaining comment categories of alignment, speed, intermodal, vehicles, scoping meetings, safety and ridership each accounted for a much lower percentage (generally less than 5 percent) of comments received from public outreach efforts and thus were combined to form the “other” category in Exhibit 7-5, for the purpose of clarity. The general comment category is the single largest category of comments received from public outreach efforts at 23 percent. Comments categorized as general do not pertain to any of the other comment categories and are broad in nature. An example of a general comment may include a personal position statement regarding the program such as an individual’s declaration of support toward the program’s goals and objectives.

The alternatives and regional connection comment categories accounted for the second largest categories of comments received with each representing 13 percent of the total at the corridor level. In general, these comments centered around the proposed alignment alternatives or the desire for increased regional connections. The stations category represented the next largest category of comments followed by operations at 12 and 11 percent respectively. The majority of these comments highlighted the desire for local station improvements with multimodal linkages.

Exhibit 7-5—Summary of Public Comments by Category

The public scoping period solicited public comments at the beginning of the Tier 1 EIS process. NYSDOT has and will continue to collect, record and consider public comments throughout the duration of the Tier 1 EIS.

7.5. Stakeholder Coordination

7.5.1. Agency Coordination

At the onset of the program, the NYSDOT identified the appropriate federal, state, regional and local agencies as having a role and/or interest in the program. NYSDOT and FRA sent more than 37 formal letters of invitation to agencies identified as NEPA cooperating and/or participating agencies. The environmental review provisions of Section 6002 of SAFETEA-LU, MAP-21 in 2012, the FAST Act in 2015, the New York State Environmental Quality Review Act (SEQR) and the Council on Environmental Quality (CEQ) regulations (40 CFR 1508.5) set forth the role and responsibilities of cooperating and/or participating agencies. Given the magnitude and complexity of the program, the lead agencies, FRA and NYSDOT, are using a tiered process, as provided for in 40 CFR 1508.28, in completing the environmental review of the program. The initial phase of the program, Tier 1, addresses broad service-level issues and proposals for improving intercity passenger rail service along the corridor.

CEQ 40 CFR 1508.5 outlines the role of the cooperating agencies, whereby a cooperating agency is any federal agency, other than a lead agency, that has jurisdiction by law or special expertise with respect to any environmental impact involved in a proposed project or project alternative. A state or local agency of similar qualifications or, when the effects are on lands of tribal interest, a Native American tribe, may also become a cooperating agency. The responsibilities of cooperating agencies include providing input throughout the duration of the program, participating in meetings, reviewing and providing comments on program progress and reviewing and commenting on the Tier 1 Draft

EIS and the Tier 1 Final EIS. The actions proposed by the program may require a permit or approval from a cooperating agency. Cooperating agencies are also participating agencies, and all references to participating agencies include cooperating agencies.

The role of participating agencies, a federal, state, tribal or local government agency that may have an interest in the program, includes participation in the NEPA process, providing input throughout the duration of the program and identifying any issues or concerns regarding the program. According to Section 6002 of SAFETEA-LU, it is the responsibility of participating agencies to identify, as early as practicable, any issues of concern regarding the program's potential impacts. The program may impact resources that participating agencies are involved in managing. Exhibit 7-6 lists the cooperating and participating agencies invited to be involved in the program.

Cooperating and participating agencies have similar roles and responsibilities, but cooperating agencies have a higher degree of authority, responsibility, and involvement in the environmental review process. A distinguishing feature of a cooperating agency is that the CEQ regulations (40 CFR Section 1501.6) permit a cooperating agency to *"assume on request of the lead agency responsibility for developing information and preparing environmental analyses including portions of the environmental impact statement concerning which the cooperating agency has special expertise."* An additional distinction is that, pursuant to 40 CFR 1506.3, *"a cooperating agency may adopt without recirculation the environmental impact statement of a lead agency when, after an independent review of the statement, the cooperating agency concludes that its comments and suggestions have been satisfied."* This provision is particularly important to permitting agencies, such as the U.S. Army Corps of Engineers, who, as cooperating agencies, routinely adopt U.S. DOT environmental documents.

7.5.2. Empire Project Advisory Committee (EPAC)

NYSDOT formed a project advisory committee, the Empire Project Advisory Committee (EPAC) to help shape and guide decision making throughout the environmental review process. The purpose of the EPAC is to create a forum to hold meetings with representatives from key agencies, statewide government organizations, major railroads, metropolitan planning organizations and other key stakeholders. NYSDOT sent an invitation letter to key stakeholders identified as having a potential interest or role in the program. The letter formally invited involvement in the program, membership in the program's advisory committee and attendance at the first agency scoping meeting. The EPAC also serves as a communication conduit whereby members can share the program's progress with their constituents. The EPAC was comprised of 47 unique agencies, as listed in Exhibit 7-7.

To date, NYSDOT has held four EPAC meetings in an effort to seek input and feedback as the program progresses through the environmental review process. The first EPAC meeting presented an overview of the program along with the program's goals and objectives. The meeting took place on October 18, 2010 at the Capital District Transportation Committee (CDTC) Office in Albany, New York with approximately 40 persons in attendance. The second EPAC meeting presented preliminary findings and gathered input from EPAC members and addressed questions and comments.

Exhibit 7-6—Cooperating and Participating Agency Engagement

Agency	Reason for Involvement	Responsibility
Amtrak – National Railroad Passenger Corporation	Operates passenger service along the Empire Corridor	Invited Cooperating
United States (U.S.) Fish & Wildlife Service	Consultation regarding effects on aquatic and terrestrial wildlife as well as coordination with threatened and endangered species under Section 7 of the U.S. Endangered Species Act	Invited Cooperating
U.S. Environmental Protection Agency, Region II	Regulatory concerns include General Conformity under the U.S. Clean Air Act and Section 404 of the U.S. Clean Water Act	Accepted Cooperating
Federal Highway Administration	Oversight of the Federal Highway system in the U.S.	Accepted Cooperating
Federal Transit Administration	Oversight of passenger railroads in the U.S.	Accepted Cooperating
U.S. Army Corps of Engineers	Permitting responsibility under Section 404 of the U.S. Clean Water Act and permitting responsibility under Section 10 of the U.S. Rivers and Harbors Act	Invited Cooperating
National Marine Fisheries Service	Consultation regarding proposed alternatives relative to ecological effects on coastal waters	Invited Cooperating
U.S. Coast Guard	Permitting administration of Section 9 of the U.S. Rivers and Harbors Act	Accepted Cooperating
New York State (NYS) Department of Environmental Conservation	Permitting responsibility under Section 401 Water Quality Certification, and the State's Article 24 Freshwater Wetlands regulatory program and Article 15 Protection of Waters regulatory program	Invited Cooperating
NYS Department of State	Consistency with the State's Coastal Zone Management Plan	Invited Cooperating
NYS Office of Parks, Recreation & Historic Preservation	Oversight office for resources including Section 4(f) and Section 106 resources	Accepted Cooperating
National Park Service	Responsible for oversight of National Parks	Invited Cooperating
NYS Historic Preservation Office	Coordinating effects determination for Section 106 of the National Historic Preservation Act	Invited Cooperating
Federal Emergency Management Agency	Consultation regarding floodplains and modifications to existing floodplains	Invited Participating
Metro-North Railroad	Major railroad owner/operator in the Empire Corridor	Invited Participating
NYS Canal Corporation	Responsible for the operation of the canal system	Invited Participating

Exhibit 7-6—Cooperating and Participating Agency Engagement (cont'd.)

Agency	Reason for Involvement	Responsibility
Capital District Transportation Committee	Transportation planning organization for the Albany-Schenectady-Troy metropolitan area	Accepted Participating
Genesee Transportation Council	Transportation planning organization for the Genesee-Finger Lakes Region	Accepted Participating
Greater Buffalo-Niagara Regional Transportation Council	Transportation planning organization for the Erie and Niagara counties	Invited Participating
Herkimer-Oneida Counties Transportation Study	Transportation planning organization for the Herkimer and Oneida counties	Invited Participating
Orange County Transportation Council	Transportation planning organization for Orange County	Invited Participating
New York Metropolitan Transportation Council	Transportation planning organization for New York City, Long Island and the lower Hudson Valley	Invited Participating
Poughkeepsie-Dutchess County Transportation Council	Transportation planning organization for Dutchess County	Invited Participating
Syracuse Metropolitan Transportation Council	Transportation planning organization for Onondaga County and small portions of Madison and Oswego Counties	Invited Participating
Ulster County Transportation Council	Transportation planning organization for the Kingston Urbanized area as well as a portion of the Poughkeepsie-Newburgh Urbanized Transportation Management Area	Invited Participating
Capital District Transportation Authority (CDTA)	Responsible for transportation connections in the Albany-Schenectady-Troy metropolitan area	Accepted Participating
Metropolitan Transportation Authority (MTA)	Responsible for transportation connections in the New York City, Long Island and lower Hudson Valley	Invited Participating
Niagara Frontier Transportation Authority (NFTA)	Responsible for transportation connections in the Buffalo Niagara region	Invited Participating
Central New York Regional Transportation Authority (CENTRO)	Responsible for transportation connections in the central New York community	Invited Participating
Rochester Genesee Regional Transportation Authority (RGRTA)	Responsible for transportation connections in Monroe, Genesee, Livingston, Orleans, Wayne, Wyoming and Seneca Counties	Invited Participating
Erie County Department of Environment and Planning	Responsible for environmental oversight in Erie County	Accepted Participating
NYC Mayor's Office of Environmental Coordination	Responsible for environmental oversight in New York City	Invited Participating
NYC Parks and Recreation	Responsible for parks and recreation areas in New York City	Invited Participating
NYC Department of Environmental Protection	Responsible for environmental oversight in New York City	Invited Participating

Exhibit 7-7—EPAC Member Agencies

TYPE OF AGENCY	AGENCY
Federal Agencies	<ul style="list-style-type: none"> • Federal Railroad Administration • Federal Highway Administration • United States Environmental Protection Agency • U.S. Army Corps of Engineers • Federal Transit Administration • National Park Service • National Marine Fisheries Service • U.S. Fish & Wildlife Service • U.S. Department of Interior • U.S. Coast Guard • Federal Emergency Management Agency
State Agencies	<ul style="list-style-type: none"> • NYS Department of Transportation • NYS Department of Environmental Conservation • NYS Department of State • NYS Empire State Development Corporation • NYS Office of Parks, Recreation & Historic Preservation • State of New York, Office of the Governor • NYS Thruway Authority • NYS Canal Corporation • NYS Historic Preservation Office
Local Agencies	<ul style="list-style-type: none"> • Erie County Department of Environmental Planning • New York City Mayors Office of Environmental Coordination • New York City Department of Parks and Recreation • NYC Department of Environmental Protection
Transportation Agencies/MPOs	<ul style="list-style-type: none"> • NYS Metropolitan Planning Organizations • Metropolitan Transportation Authority • Capital District Transportation Committee • Genesee Transportation Council • Greater Buffalo-Niagara Regional Transportation Council • Herkimer-Oneida Counties Transportation Study • Orange County Transportation Council • New York Metropolitan Transportation Council • Poughkeepsie-Dutchess County Transportation Council • Syracuse Metropolitan Transportation Council • Ulster County Transportation Council • Capital District Transportation Authority • Niagara Frontier Transportation Authority • Rochester Genesee Regional Transportation Authority • Central New York Regional Transportation Authority
Railroads	<ul style="list-style-type: none"> • CSX Transportation, Inc. • Amtrak – National Railroad Passenger Corporation • Metro-North Railroad • Canadian Pacific Railroad • Finger Lakes Railroad
Rail Transportation Groups	<ul style="list-style-type: none"> • High Speed Rail Coalition • Empire State Passengers Association • Railroads of New York

The second EPAC meeting was held on March 21, 2011 at the NYSDOT Main Office in Albany, New York. Approximately 30 EPAC members participated in the second meeting. The third EPAC meeting was held on March 8, 2012 at the NYSDOT main office in Albany, New York. Approximately 37 EPAC members participated in the third meeting, which provided an update on the program's progress, including an overview of the alternatives development and screening process. The fourth EPAC meeting was held on March 4, 2013. The focus of this meeting was on the alternatives evaluations and the economic benefits of the program. All four EPAC meetings included a webinar option for EPAC members to participate in the meeting remotely if they were unable to travel to attend the meetings in person.

7.5.3. Program Partners Involvement

In addition to the EPAC, the program team has provided two of the program's key partners, Amtrak (National Railroad Passenger Corporation) and CSX Transportation, Inc. (CSXT) with briefings on the status of the alternatives development phase of the program. These briefings provided both Amtrak and CSXT with an opportunity to individually view a presentation on the range of alternatives under consideration and provide feedback. NYSDOT is taking feedback from these key program partners into consideration as the program progresses.

7.5.4. Consultation with Federally Recognized Tribes and Consulting Parties Pursuant to the National Historic Preservation Act

Section 106 of the National Historic Preservation Act (NHPA) mandates that federal agencies consider the effect of their actions on any properties listed on or determined eligible for listing on the National Register of Historic Places (NR) and afford the federal Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on such undertakings. Section 101(d)(6)(B) of the NHPA requires the lead federal agency to consult with any Indian tribe or Native Hawaiian organization that attaches religious and cultural significance to historic properties that may be affected by the undertaking. The lead federal agency shall ensure that consultation in the Section 106 process provides the Indian tribe or Native Hawaiian organization a reasonable opportunity to identify its concerns about historic properties, advise on the identification and evaluation of properties, including those of traditional religious and cultural importance, articulate its views on the undertaking's effects on such properties, and participate in the resolution of adverse effects. Section 106 also requires consultation with consulting parties, which include SHPO and/or ACHP, and federally recognized Indian tribes/Tribal Historic Preservation Officers (THPOs) or Native Hawaiian organizations. Consulting parties also include local governments and other individuals and organizations with a demonstrated interest in the program, whose participation is subject to approval by the responsible federal agency, as described in 36 CFR 800.2. The lead federal agency, in consultation with the State Historic Preservation Office (SHPO) and appropriate consulting parties must determine whether a proposed action would have any adverse effects on the characteristics of a property that qualify it for the NR.

Federally Recognized Tribes

Pursuant to 36 CFR 800.3(f)(2), the lead federal agency, FRA, in consultation with NYSDOT and SHPO, identified federally-recognized Indian tribes (tribal nations) under Section 106 of NHPA. FRA identified the tribes on the basis of previously recognized geographic areas of interest for Section 106 consultation commonly used by NYSDOT and SHPO. FRA utilized the tribal status and contact information on file with the U.S. Bureau of Indian Affairs as part of the identification process. On May 3, 2011, FRA sent letters to the following federally recognized tribes inviting them to participate as consulting parties per 36 CFR Part 800.2(c)(2):

- Cayuga Nation,
- Seneca Nation of Indians,
- Tonawanda Seneca Nation,
- Onondaga Nation,
- Oneida Indian Nation,
- Tuscarora Indian Nation,
- Stockbridge-Munsee Community Band of the Mohican Nation,
- Delaware Nation,
- Shinnecock Nation,
- St. Regis Mohawk Tribe,
- Seneca-Cayuga Tribe of Oklahoma.

The Mohican Nation, the Oneida Nation, and the Seneca Nation replied. These three tribal nations expressed their interest in the program and their desire to participate in consultation on the program in accordance with Section 106 of NHPA.

On May 4, 2012, NYSDOT invited all of the federally-recognized tribal nations listed above (and one additional federally-recognized tribe, the Delaware Tribe of Indians) to an information-gathering meeting in Rochester, New York, on May 30, 2012. At the meeting, the program sponsors presented an overview of the program, the proposed Section 106 methodology and the preliminary program APE, and took comments from the tribal nations. At the request of several of the tribes that participated in the May 30, 2012 meeting, NYSDOT sent maps of the alternative alignments showing the approximate locations of identified archaeological sites to the tribal nations. On November 21, 2012, NYSDOT on behalf of FRA sent letters to each of the tribal nations and SHPO describing and illustrating the boundaries of the proposed APE for their review and comment. In response to comments provided by the Oneida Nation to FRA and NYSDOT in a letter dated December 14, 2012, FRA and NYSDOT engaged in additional correspondence and a face-to-face meeting (April 18, 2013) with the Oneida Nation.

On May 2, 2013, FRA and NYSDOT held a meeting to provide project information to the federally-recognized tribes and give them an opportunity to provide comments. On May 2, 2013, FRA and NYSDOT met with SHPO to discuss utilizing a Draft Programmatic Agreement (PA) to govern future requirements under Section 106 of the NHPA. Preemptively, a Draft PA was provided as part of the Tier 1 Draft EIS for review and comment. The Draft Section 106 Programmatic Agreement (included as Appendix H of the Tier 1 Draft EIS) intended to address the process by which FRA and NYSDOT could continue to phase Section 106 activities and comply with Section 106 once Tier 2 undertakings were defined. This Draft PA could govern the future identification of historic properties as well as the assessment of and resolution of adverse effects to historic properties, as appropriate. In advancing individual projects in the Tier 2 assessments, railroad exemptions under Section 11504 of the FAST Act (which directed U.S. DOT in concert with ACHP to develop certain Section 106

exemptions for railroad rights-of-way) will also be assessed. FRA transmitted the Draft PA to the federally recognized Indian tribes and consulting parties for review and comment. FRA received comments from the Oneida Indian Nation.

Other Consulting Parties

In addition to consultation with federally-recognized Indian tribal nations, FRA and NYSDOT identified and engaged with consulting parties, including state recognized tribal nations, in accordance with 36 CFR 800.2(c)(3) through (5) and 800.3(f). FRA and NYSDOT, in consultation with SHPO, identified potential consulting parties for the Tier 1 based on a demonstrated interest in broad, corridor-wide, or regional-level aspects of the proposed undertaking. In addition to the SHPO and ACHP, the list of potential consulting parties included the following non-federally recognized tribes and state or region-wide preservation organizations:

- Mohawk Nation Council of Chiefs,
- Unkechaug Nation,
- Preservation League of New York State,
- Hudson River Valley Greenway,
- Erie Canal National Heritage Corridor,
- Preservation Buffalo Niagara,
- Landmark Society of Western New York,
- Preservation Association of Western New York.

Three parties responded expressing interest in participating as consulting parties: the Preservation League of New York State, the National Park Service Erie Canal National Heritage Corridor, and Preservation Buffalo Niagara. FRA subsequently approved the consulting party status of these three entities. On May 2, 2013, FRA and NYSDOT held a meeting to provide program information to the consulting parties and give them an opportunity to provide comments. Representatives from the Preservation League of New York State and the Erie Canal National Heritage Corridor attended.

On August 6, 2018, FRA notified the SHPO and consulting parties that the Section 106 process for the Tier 1 phase of the program is considered complete. FRA concluded that the Tier 1 EIS represents non-destructive program planning activities, allowed for under 36 CFR Part 800(1)(c), which have no potential to cause effects to historic properties. FRA and NYSDOT remain committed to following the requirements of 36 CFR 800 for Tier 2 projects that receive federal funding, as well as determining the applicability of changes under the FAST Act. Section 11504 of the FAST Act (49 U.S.C. 2402), enacted on December 4, 2015, mandated the development of a Section 106 exemption for “railroad rights-of-way.”

7.6. Publication and Comment Period for the Tier 1 Draft EIS

The Tier 1 Draft EIS for the High Speed Rail Empire Corridor Program appeared in the Federal Register on January 31, 2014. Publication of the Tier 1 Draft EIS included mailing notification letters to regulatory agencies; federal, state, local, and elected officials; and the public. Legal notices announcing the availability of the Tier 1 Draft EIS and advertising the public hearing schedule were published in 11 newspapers. The Tier 1 Draft EIS was made available in 24 repositories/libraries in study area counties. NYSDOT held six public hearings at the following locations:

1. **Albany, NY**, Tuesday, March 4, 2014, Albany Nanotech Complex, 257 Fuller Road, Albany, NY;

2. **Syracuse, NY**, Wednesday, March 5, 2014, NBT Bank Stadium, 1 Tex Simone Drive, Syracuse, NY;
3. **Buffalo, NY**, Thursday, March 6, 2014, The Buffalo Transportation Pierce Arrow Museum, 263 Michigan Avenue, Buffalo, NY;
4. **Rochester, NY**, Friday, March 7, 2014, National Museum of Play at the Strong, One Manhattan Square, Rochester, NY;
5. **Utica, NY**, Tuesday, March 11, 2014, Utica Train Station, 321 Main Street, Utica, NY;
6. **Poughkeepsie, NY**, Wednesday, March 12, 2014, Cunneen-Hackett Arts Center, 12 Vassar Street, Poughkeepsie, NY

Approximately 300 persons attended the public hearings, with the largest attendance at Buffalo (138), Albany (129), Syracuse (103), and Rochester (102). Each meeting consisted of an open house at 4 p.m., followed by the public hearing with presentations commenced at 6 p.m. The public hearings included a video presentation providing an overview of the program and the Tier 1 Draft EIS and the review process, and provided opportunity for public and private oral testimony and written comment.

The public comment period, originally scheduled to close on March 24, 2014, was extended to April 30, 2014. NYSDOT held three additional public meetings in April after the public hearings, but prior to the close of the public comment period. NYSDOT held two of these meetings in the Niagara region and one meeting in the Albany region.

7.7. Comments on the Tier 1 Draft EIS

A total of 932 persons commented, including 23 agencies, 17 elected officials, 14 railroads, 16 organizations and businesses, three Native American tribes, and 727 individuals. These comments indicated overwhelming support for the program, with 770 commenters, or 83 percent, in favor of improvements for rail within the corridor. Approximately 6 percent (or 60) were not supportive of the program, and 11 percent (or 102) were neutral (refer to Exhibit 7-8).

The majority of elected officials, state, regional, local agencies, and tribes supported improvements to high-speed rail within the Empire Corridor. The majority of private railroads, shippers, and companies reliant on freight rail indicated the strongest support for the Base Alternative.

Approximately 95 percent of businesses and organizations and 80 percent of individuals supported program improvements. Among businesses and organizations, Alternative 110 had the highest level of support, and both Alternatives 110 and 125 had the highest level of support among individuals.

Of the various types of individual comments received from these individuals and organizations, NYSDOT received a total of 1,754 comments, of which 19 percent (329) were mail, 39 percent (679) were email, 27 percent (478) were submitted through the website form, and 15 percent (268) were received at public hearing/meetings.

Exhibit 7-9 shows a summary of the topics from comments received. These include more than one topic per commenter/letter and exclude those letters that had no comments. NYSDOT received comments on topics addressing the project purpose and need: on-time performance, ridership, travel times, frequency, capacity, higher speeds, and dedicated track. Other topics voiced general

Exhibit 7-8—Nature of Tier 1 Draft Comments

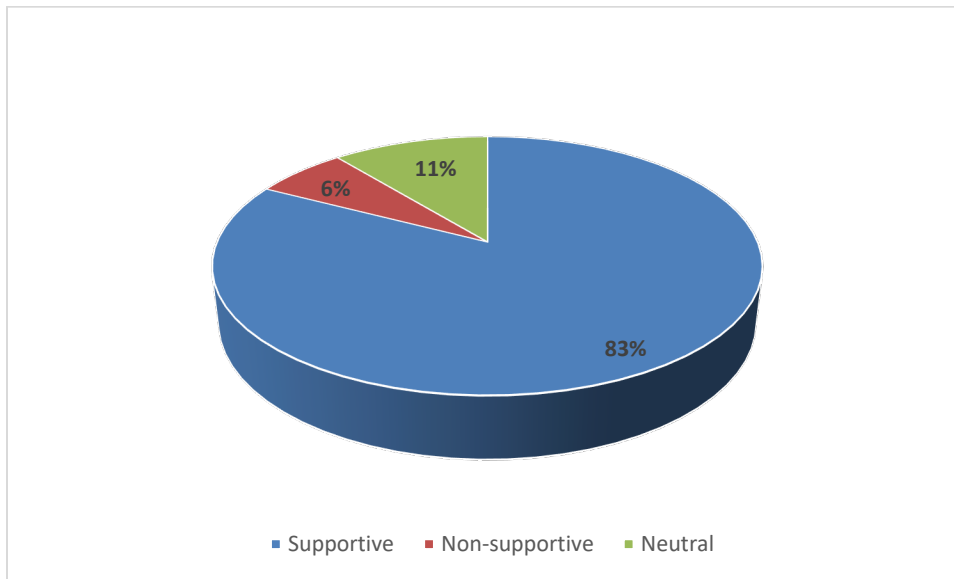
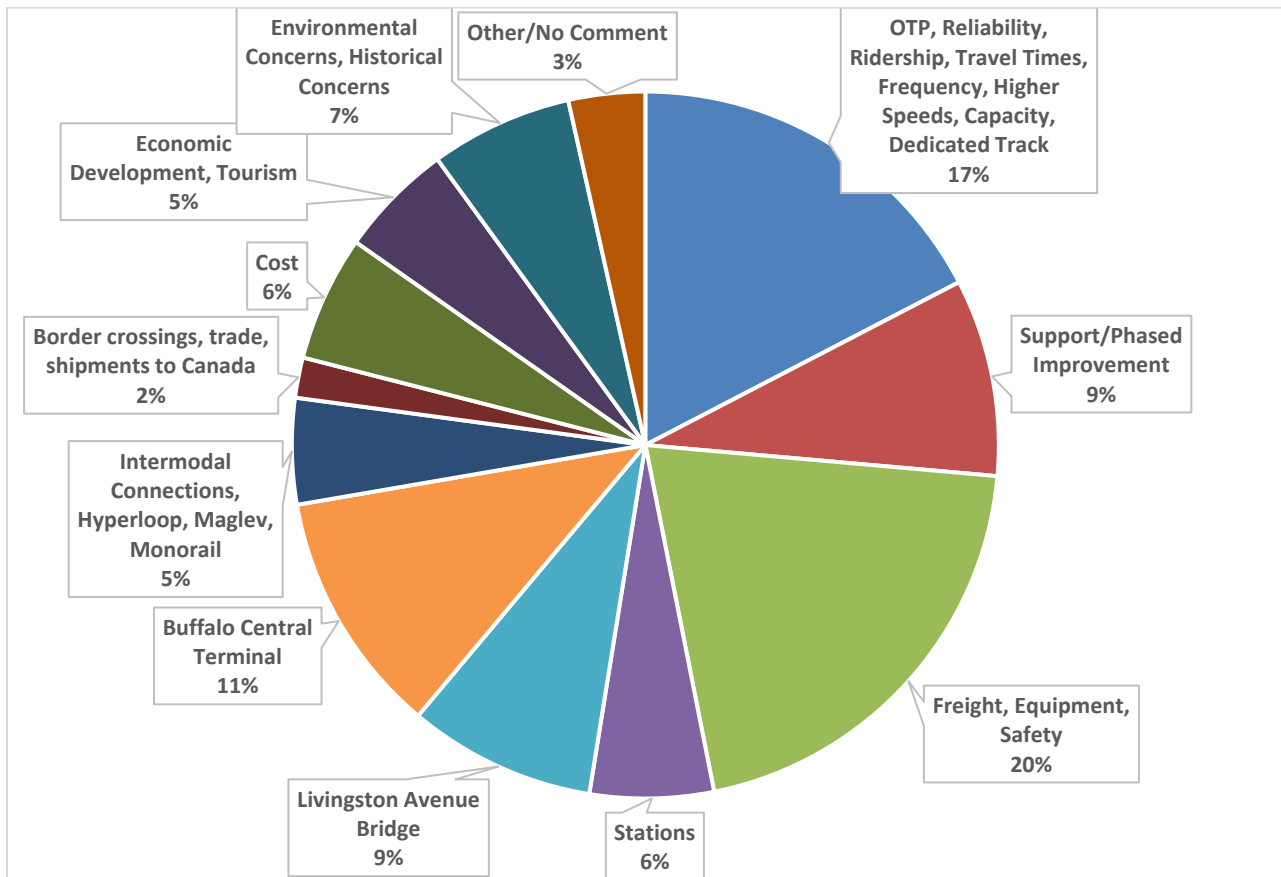


Exhibit 7-9—Comment Categories



support (or opposition) to the project or commented on freight, equipment, and safety, costs, and stations. Commenters also expressed concerns regarding the Livingston Avenue Bridge improvements and the historic Buffalo Central Terminal. Other topics covered included environmental/historic concerns, economic development/tourism, and comments regarding intermodal connections and use of alternative technologies such as maglev, hyperloop, or monorail.

Although the comments covered a wide range of issues, as shown in Exhibit 7-9, three recurring groups of comments emerged. The following summarizes the resolution of these three recurring comments:

1. **Potential for Freight Impacts:** Private railroads, freight companies, shippers, and businesses heavily reliant on rail freight expressed concerns that the High Speed Rail Empire Corridor Program may impact freight movements that could have an adverse impact on their businesses. Alternative 90B would result in better segregation of passenger trains from freight trains than the Base Alternative, with the installation of additional third and fourth tracks that would add capacity and provide the ability to route passenger trains around freight trains even while passenger trains operate at higher speeds. In 2035, Alternative 90B would involve the least delay-minutes per 100 train miles operated for freight trains of the alternatives considered, as well as the second lowest trip time for freight trains between Selkirk Yard, outside Albany, and Buffalo (based on the results of the rail simulation, presented in Appendix D and discussed in Chapter 6). The selection of Alternative 90B as the Preferred Alternative would result in the best on-time performance for Amtrak service in 2035.
2. **Buffalo Central Terminal Reuse:** A number of commenters indicated that reuse and restoration of historic Central Terminal in east Buffalo as an Amtrak Station should be considered and incorporated into the High Speed Rail Empire Corridor Program's station improvements. As part of a separate study of relocation of the Amtrak Buffalo-Exchange Street Station, the Train Station Siting Study Committee considered station relocation to the historic Central Terminal, in addition to other prospective sites. In April 2017, the Governor of New York State and the Mayor of Buffalo announced that the \$1 million station siting study funded by the state culminated in a committee selection of a future downtown location for a combined Amtrak and bus station. The committee, composed of the governor, the mayor, federal and state legislators, county and local officials, Amtrak, Trailways, and NYSDOT, voted in favor of a station site collocated near the existing Buffalo-Exchange Street Station, not the Central Terminal site.¹⁶⁰ Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use.
3. **Incorporation of Pedestrian Access on the Livingston Avenue Bridge:** A number of legislators, city officials, and commenters indicated that future redesign of the Livingston Avenue Bridge should incorporate pedestrian access and that other issues should also be considered. The Livingston Avenue Bridge Project involves upgrades to the Empire Corridor railroad bridge over the Hudson River connecting Albany and Rensselaer. Although a component project of the High Speed Rail Empire Corridor Program, NYSDOT will study and advance the improvements to this bridge as part of a separate project. The deteriorated condition of the rotating swing-span bridge, which was built in approximately 1902, requires that trains cross at 15 miles per hour, one train at a time. The bridge opens approximately 400 times a year, but NYSDOT considers the opening

¹⁶⁰ / Submitted by Dean Robert Shibley, Facilitator, "On Track: Resolution of Stakeholders on a Decision for a New Train Station Location in the City of Buffalo," April 20, 2017. Accessed August 3, 2017: <<https://www.city-buffalo.com/files/New%20Site%20Images%20Aug%202016/Train%20Page/OnTrack-Results.pdf>>

mechanism unreliable and the bridge design deficient for current standards. Amtrak now controls and operates the bridge, owned by CSXT, through a lease signed in 2012. Comments from the public and elected and city officials advocate for provision of pedestrian access across the bridge, although CSXT (the bridge owner) has cited safety concerns regarding providing pedestrian access close to operating trains. The decision regarding the design and configuration of the bridge, and whether it will be rehabilitated or replaced, will be made as part of this separate NYSDOT project.

Appendix K presents individual responses to each specific comment received.

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Acronyms

AC	—	Alternating Current
ACHP	—	Advisory Council on Historic Preservation
ACMs	—	Asbestos Containing Materials
ADA	—	Americans with Disabilities Act
Amtrak	—	National Railroad Passenger Corporation
APE	—	Area of Potential Effect
ARRA	—	American Recovery and Reinvestment Act of 2009
AST	—	Aboveground Storage Tanks
ASTM	—	American Society for Testing and Materials
BA	—	Base Alternative
BCA	—	Bird Conservation Area
BEA	—	Bureau of Economic Analysis
BMPs	—	Best Management Practices
BSPS	—	Bergen Swamp Preservation Society
CAA	—	U.S. Clean Air Act
CAAA	—	Clean Air Act Amendments
CAFE	—	Combined Corporate Average Fuel Economy
CBRS	—	Coastal Barrier Resources System
CBS	—	NYS Chemical Bulk Storage System
CDTA	—	Capital District Transportation Authority
CDTC	—	Capital District Transportation Committee
CE	—	Categorical Exclusion
CEA	—	Critical Environmental Areas
CENTRO	—	Central New York Regional Transportation Authority
CEQ	—	Council on Environmental Quality
CERCLA	—	Comprehensive Environmental Response, Compensation and Liability Act
CERCLIS	—	Comprehensive Environmental Response, Compensation, and Liability Information Systems (also known as Superfund)
CFR	—	Code of Federal Regulations
CLG	—	Certified Local Government
CLOMR	—	Conditional Letter of Map Revision
CO	—	Carbon monoxide
CO₂		Carbon dioxide
CO₂e		Carbon dioxide equivalent

CP	—	Control Point
CPP	—	Construction Protection Plan
CSXT	—	CSX Transportation, Inc.
CWA	—	U.S. Clean Water Act
CZM	—	Coastal Zone Management
CZMA	—	Coastal Zone Management Act
dB	—	Decibel
dBA	—	A-weighted decibels
DC	—	Direct Current
DOI	—	U.S. Department of the Interior
DPM	—	Diesel Particulate Matter
DPW	—	Department of Public Works
EA	—	Environmental Assessment
ECL	—	Environmental Conservation Law
EFH	—	Essential Fish Habitat
EIS	—	Environmental Impact Statement
EO	—	Executive Order
EPAC	—	Empire Project Advisory Committee
EPCRA	—	Emergency Planning and Community Right-to-Know Act of 1986
ESA	—	Environmental Site Assessment
ESC	—	Erosion and Sediment Control Plan
ESPA	—	Empire State Passenger Association
FAA	—	Federal Aviation Administration
FE	—	Federal Endangered Species
FEMA	—	Federal Emergency Management Agency
FHWA	—	Federal Highway Administration
FIRM	—	Flood Insurance Rate Map
FNOI	—	Final Notice of Intent
FPA	—	Floodplain Administrator
FPPA	—	Farmland Protection Policy Act of 1981
FR	—	Federal Register
FRA	—	Federal Railroad Administration
FT	—	Federal Threatened Species
FTA	—	Federal Transit Administration
FY	—	Fiscal Year
GBNRTC	—	Greater Buffalo-Niagara Regional Transportation Council

GCT	—	Grand Central Terminal
GE	—	General Electric Company
GHG	—	Greenhouse Gas
GIS	—	Geographic Information System
GTC	—	Genesee Transportation Council
GWP	—	Global Warming Potential
HABS	—	Historic American Buildings Survey
HAER	—	Historic American Engineering Record
HAPs	—	Hazardous Air Pollutants
HFC	—	Hydrofluorocarbons
HOCTS	—	Herkimer-Oneida Counties Transportation Study
HSIPR	—	High Speed Intercity Passenger Rail
HSR	—	High Speed Rail
HST	—	High Speed Train
Hz	—	Hertz
ISTEA	—	Intermodal Surface Transportation Efficiency Act
kV	—	Kilovolts
LEED	—	Leadership in Energy and Environmental Design
Leq (h)	—	Hourly equivalent noise level (typically the worst-case, peak hour noise level)
LOCMA	—	Lower Orange County Metropolitan Area
LOMR	—	Letter of Map Revision
L RTP	—	Long Range Transportation Improvement Plan
LWCF	—	United States Land and Water Conservation Fund Act
LWRP	—	Local Waterfront Revitalization Plan
MAS	—	Maximum Authorized Speed
mgt	—	Million Gross Tons
MMPs	—	Materials Management Plans
MNR	—	Metro-North Railroad
MOSF	—	Major Oil Storage Facility
MOA	—	Memorandum of Agreement
MOU	—	Memorandum of Understanding
MP	—	Milepost
MPO	—	Metropolitan Planning Organization
mph	—	Miles per Hour
MSA	—	Metropolitan Statistical Area
MSAT	—	Mobile Source Air Toxics

MS4	—	Municipal Separate Storm Sewer
MTA	—	Metropolitan Transportation Authority
MTC	—	New York Metropolitan Transportation Council
NAA	—	Non-Attainment Area
NAAQS	—	National Ambient Air Quality Standards
NEPA	—	National Environmental Policy Act of 1969
NERRS	—	National Estuarine Research Reserve System
NFIP	—	National Flood Insurance Program
NFTA	—	Niagara Frontier Transportation Authority
NHL	—	National Historic Landmark
NHPA	—	National Historic Preservation Act
NJ	—	New Jersey
NMFS	—	National Marine Fisheries Service
NNL	—	National Natural Landmark
NO	—	Nitric Oxide
NO₂	—	Nitrogen Dioxide
NOAA	—	National Oceanic and Atmospheric Administration
NOI	—	Notice of Intent
NORAC	—	Northeast Operating Rules Advisory Committee
NO_x	—	Nitrogen Oxides
NPDES	—	National Pollutant Discharge Elimination System
NPS	—	National Park Service
NR	—	National Register of Historic Places
NRCS	—	Natural Resources Conservation Service
NRI	—	Nationwide Rivers Inventory
NWI	—	National Wetlands Inventory
NWP	—	Nationwide Permit
NWR	—	National Wildlife Refuge
NYAC	—	New York Archaeological Council
NYC	—	New York City
NYCRR	—	New York Code of Rules and Regulations
NYMA	—	New York Metropolitan Area
NYMTC	—	New York Metropolitan Transportation Council
NYNHP	—	New York Natural Heritage Program
NYS	—	New York State
NYSDEC	—	New York State Department of Environmental Conservation

NYSDOL	—	New York State Department of Labor
NYSDOS	—	New York State Department of State
NYSDOT	—	New York State Department of Transportation
NYSESD	—	New York State Empire State Development Corporation
NYSGIS	—	New York State Geographic Information System
NYSM	—	New York State Museum
NYSMPO	—	New York State Metropolitan Planning Organizations
NYSOPRHP	—	New York State Office of Parks, Recreation, and Historic Preservation
O&M	—	Operating and Maintenance
OCTC	—	Orange County Transportation Council
OMB	—	United States Office of Management and Budget
OTP	—	On-time performance
PA	—	Programmatic Agreement
PBS	—	New York State Petroleum Bulk Storage
PCB	—	Polychlorinated Biphenyl
PDCTC	—	Poughkeepsie-Dutchess County Transportation Council
PFC	—	Perfluorocarbons
PIP	—	Public Involvement Plan
PM	—	Particulate Matter
PM_{2.5}	—	Particulate Matter under 2.5 microns in size
PM₁₀	—	Particulate Matter under 10 microns in size
PPA	—	Pollution Prevention Act of 1990
ppm	—	Parts per Million
PRIIA	—	Passenger Rail Investment and Improvement Act of 2008
PTC	—	Positive Train Control
QDN	—	Milepost designation, Niagara Branch
QH	—	Milepost designation, 125 high speed corridor, Empire Corridor West
RCRA	—	U.S. Resource Conservation and Recovery Act
RCRIS	—	Resource Conservation and Recovery Information System
RECs	—	Recognized Environmental Conditions
RGRTA	—	Rochester Genesee Regional Transportation Authority
ROD	—	Record of Decision
RONY	—	Railroads of New York
ROW	—	Right-of-Way
RSIA	—	U.S. Rail Safety Improvement Act of 2008
RTA	—	Regional Transportation Authority

SAFETEA-LU	—	U.S. Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SASS	—	Scenic Areas of Statewide Significance
SCFWH	—	Significant Coastal Fish and Wildlife Habitats
SE	—	State Endangered Species
SED	—	New York State Education Department
SEQR	—	New York State Environmental Quality Review Act
SF₆	—	Sulfur Hexafluoride
SHPA	—	New York State Historic Preservation Act of 1980
SHPO	—	State Historic Preservation Officer
SIP	—	State Implementation Plan
SMTC	—	Syracuse Metropolitan Transportation Council
S/NR	—	State/National Register of Historic Places
SO₂	—	Sulfur Dioxide
SPCC	—	Spill Prevention Control Plan
SPDES	—	State Pollutant Discharge Elimination System
SR	—	State Register of Historic Places
SSA	—	Sole Source Aquifer
ST	—	State Threatened Species
STB	—	Surface Transportation Board
STIP	—	Statewide Transportation Improvement Program
SWMP	—	Stormwater Management Plan
SWPPP	—	Stormwater Pollution Prevention Plan
TAP	—	Toxic Air Pollutant
TEA-21	—	Transportation Equity Act for the 21 st Century
TEM	—	NYSDOT Environmental Manual
Tg CO₂e	—	Teragrams of Carbon Dioxide Equivalent
THPO	—	Tribal Historic Preservation Officer
TIGER	—	Transportation Investment Generating Economic Recovery
TIP	—	Transportation Improvement Program
TMDL	—	Total Maximum Daily Load
TOD	—	Transit Oriented Development
TRIS	—	Toxic Release Inventory System
UCTC	—	Ulster County Transportation Council
U.S.	—	United States
U.S. ACE	—	United States Army Corp of Engineers

U.S.C.	—	United States Code
USCG	—	United States Coast Guard
USDA	—	United States Department of Agriculture
U.S. DOT	—	United States Department of Transportation
U.S. EPA	—	United States Environmental Protection Agency
U.S. FWS	—	United States Fish and Wildlife Service
USGBC	—	United States Green Building Council
USGS	—	United States Geological Survey
UST	—	Underground Storage Tank
VHS	—	Very High Speed
VMT	—	Vehicle Miles Traveled
VOC	—	Volatile Organic Compound
WMA	—	Wildlife Management Area

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Glossary of Terms

100-Year Floodplain – The portion of the floodplain submerged by the statistical flood event with a 1 percent probability of occurring in any year.

Alightings – The number of passengers leaving a passenger vehicle at a station.

Aquifer – Rock or sediment that is saturated with water and sufficiently permeable to transmit economically significant quantities of water to wells and springs.

American Recovery and Reinvestment Act of 2009 (ARRA) – The American Recovery and Reinvestment Act of 2009 (ARRA, P.L. 111-5), enacted on February 17, 2009, appropriated a total of \$787 billion, including \$8 billion specifically for HSIPR and \$1.3 billion for Amtrak capital grants. ARRA sought from states “shovel ready” transportation projects, among them programs and projects to advance high-speed rail.

Archaeological resources – Materials and objects that remain below the ground surface as evidence of the life and culture of historic, prehistoric, or ancient people, such as artifacts, structures, or settlements. Resources of concern are located in areas known or suspected to contain subsurface artifacts of pre-European or post-European settlement populations. Areas of expected moderate to high archaeological sensitivity according to various factors including present and past topography, exposure, slope, distance to water, and availability of food.

At-grade – The intersection of two roads, or a road and a railway, that cross at the same elevation.

Attainment area – A geographic area in which levels of a criteria air pollutant meet the health-based primary standard (National Ambient Air Quality Standard) for the pollutant. Attainment areas are defined using federal pollutant limits set by the U.S. Environmental Protection Agency.

Automatic Block Signaling (ABS) – A block system that consists of a series of signals that divides a railway line into a series of blocks and then functions to control the movement of trains between them through automatic signals. ABS operation is designed to allow trains operating in the same direction to follow each other in a safe manner with greatly reduced risk of rear end collision while reducing costs and increasing capacity from previous manual block systems that require human operators.

Best Management Practice (BMP) – A structural and/or management practice employed before, during and after construction to protect receiving water quality. These practices either provide techniques to reduce soil erosion or remove sediment and pollutants from surface runoff.

Biodiversity – The diversity of genes, species, and ecosystems. This term includes the entire hierarchy of ecological organization, and encompasses regional ecosystem diversity (landscape diversity), local ecosystem diversity (community diversity), species diversity, and genetic diversity within populations of a species.

Block – A block is a group of rail cars all destined to a specific location or yard. A through freight train that is not a unit train typically has several blocks of cars. At Dewitt, the many intermodal trains that run on this line from distant points often add or drop blocks of cars that match the train's destination. Essentially, the trains are swapping blocks with each other – block swapping.

Boardings – The number of passengers entering a passenger vehicle at a station.

Cab Signaling – A system of signaling devices located in a train operator’s compartment or cab, indicating a condition affecting the movement of a train or engine and used in conjunction with interlocking signals and either in conjunction with or in lieu of wayside block signals.

Canadian Pacific Railway – A major freight rail carrier that operates in New York State, and is the host railroad for Amtrak trains between Schenectady and Rouses Point.

Car Mile – A single vehicle, such as a railroad car, moved one mile (also see “Train Mile”).

Carbon Dioxide – Carbon dioxide (CO₂) is the primary greenhouse gas (GHG) pollutant of concern from anthropogenic (man-made) sources. Although not the GHG with the strongest effect per molecule, CO₂ is by far the most abundant and, therefore, the most influential GHG. CO₂ is emitted from any combustion process (both natural and anthropogenic), from some industrial processes such as the manufacture of cement, mineral production, metal production, and the use of petroleum-based products, from volcanic eruptions, and from the decay of organic matter. CO₂ is removed (“sequestered”) from the lower atmosphere by natural processes such as photosynthesis and uptake by the oceans. CO₂ is included in any analysis of GHG emissions.

Carbon Dioxide Equivalent (CO₂e) – To present a complete inventory of all GHGs, component emissions are added together and presented as CO₂ equivalent (CO₂e)—a unit representing the quantity of each GHG weighted by its effectiveness using CO₂ as a reference. This is achieved by multiplying the quantity of each GHG emitted by a factor called global warming potential (GWP). GWPs account for the lifetime and the radiative forcing of each chemical over a period of 100 years (e.g., CO₂ has a much shorter atmospheric lifetime than SF₆, and therefore has a much lower GWP).

Carbon Monoxide (CO) – A colorless, odorless, tasteless gas formed in large part by incomplete combustion of fuel. Full combustion activities (i.e. transportation, industrial processes, space heating, etc.) are the major sources of CO.

Center Island Platform – A passenger platform located between two tracks so that it can serve them both.

Centerline – The midpoint in a cross-sectional view of a right-of-way, roadway, or railroad track, see also “Track Centers, Distance Between.”

Class I Railroad – The Surface Transportation Board (STB) defines a Class I railroad in the United States as “having annual carrier operating revenues of \$250 million or more” after adjusting for inflation using a Railroad Freight Price Index developed by the Bureau of Labor Statistics (BLS). According to the Association of American Railroads (AAR), Class I railroads had minimum carrier operating revenues of \$378.8 million (USD) in 2009. Smaller railroads are assigned to Class II or III.

Classification Yard – A rail terminal facility, usually consisting of a system of turnouts (which see) and parallel tracks, used for sorting freight cars by destination and for assembling trains.

Combined Statistical Area (CSA) – A grouping of adjacent metropolitan and/or micropolitan statistical areas (MSAs) in the United States and Puerto Rico. The United States Office of Management and Budget (OMB) defines combined statistical areas based on social and economic ties measured by commuting patterns between adjacent MSAs. The areas that combine retain their own designations as metropolitan or micropolitan statistical areas within the larger combined statistical area. The primary distinguishing factor between a CSA and an MSA is that the social and economic ties between the individual MSAs within a CSA are at lower levels than between the counties within an MSA.

Coniferous – Any of various mostly needle-leaved or scale-leaved, chiefly evergreen, cone-bearing gymnospermous trees or shrubs such as pines, spruces, and firs.

Container on Flat Car – A form of intermodal freight transportation (which see) in which freight containers are carried on railroad cars equipped for that purpose; may be arranged to handle a single level of containers or double-stacked containers (see “Double-Stack Car”).

Control Point – An interlocking, or the location of a track signal or other marker, the indications of which dispatchers can specify when controlling trains.

Cooperating Agency – Any federal, state or local agency, other than a lead agency, that has jurisdiction by law or special expertise with respect to any environmental impact involved in a proposed project or project alternative.

Critical Environmental Area (CEA) – An area designated as a CEA under the New York State Environmental Quality Act by state and local agencies must have one or more of the following exceptional or unique characteristics: 1) A benefit or threat to human health; 2) A natural setting; 3) Agricultural, social, cultural, historic, archaeological, recreational, or educational values; or 4) An inherent ecological, geological or hydrological sensitivity to change that may be adversely affected by any change.

CSX Transportation, Inc. (CSXT) – A major rail freight carrier with largest market share in New York State, and host railroad for Amtrak trains between Poughkeepsie and Niagara Falls.

Daily Trains per Route – The number of trains traversing a defined railroad line or section of line during a specified 24-hour period.

dBA – An abbreviation for A-weighted decibel. The decibel is a unit used to describe sound pressure levels on a logarithmic scale. For community noise impact assessment, an A-weighted frequency filter is used to approximate the way humans hear sound.

Deciduous – Refers to woody vegetation, such as oak or maple trees, that shed their leaves after the growing season.

Double-Ended Rail Yard – A rail yard in which a train can enter at one end and exit at the other.

Double-Stack Car – A railroad freight car that provides a frame in which a freight container can be placed and secured, with provisions and clearances to allow a second container to be placed and secured on top of the first container.

Draft Environmental Impact Statement (Draft EIS) – The document prepared by the Federal Railroad Administration (FRA) in accordance with the National Environmental Policy Act (NEPA) regulations. These regulations require that the EIS evaluate all reasonable alternatives considered, discuss the reasons that alternatives have been eliminated from detailed study, summarize the studies, reviews, consultations, and coordination required by environmental laws and Executive Orders.

Dual Mode Locomotive – Railroad locomotive that can switch from electric to diesel operation for power generation.

Empire Project Advisory Committee (EPAC) – Advisory Committee consisting of representatives from key federal/state agencies, key railroads, and statewide organizations representing regional governments.

Endangered Species – Any species which is in danger of extinction throughout all or a significant portion of its range.

Environmental Justice – Executive Order 12898 requires each federal agency to “make achieving environmental justice part of its mission by identifying and addressing... disproportionately high and adverse human health or environmental impacts on minority populations and low-income populations.”

Essential Fish Habitat (EFH) – Those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity, as defined by the regional Fishery Management Council.

Excepted track – In addition to nine numbered classes, FRA track standards also provide for “excepted” track, which carries a 10 miles per hour speed limit for freight but cannot be used by revenue passenger trains. FRA permits excepted track under very narrowly defined conditions.

Farmland of Statewide Importance – Land other than prime farmland but that is also highly productive. This is land, in addition to prime farmland, that is of statewide importance for the production of food, feed, fiber, forage, and oil seed crops.

Farmland Protection Policy Act (FPPA) – A statute enacted in 1981 by the United States Congress to ensure that significant agricultural lands are protected from conversion to non-agricultural uses. For highway projects receiving federal aid, the regulations promulgated under the FPPA (7 CFR Part 658, 1984) require a state highway authority (NYSDOT) to coordinate with the USDA Natural Resources Conservation Service. The FPPA regulates four types of farmland soils; prime farmland, unique farmland, farmland of state-wide importance, and farmland of local importance.

Farmland Soils – Soils suited to producing crops; those with soil quality, growing season and moisture supply needed to produce a sustainable yield when treated and managed using acceptable methods. Specifically, farmland soils are those soil types designated by the Natural Resources Conservation Service (NRCS) in accordance with the Farmland Protection Policy Act (FPPA) of 1981 and the implementing regulations of the United States Department of Agriculture (USDA).

Federal Emergency Management Agency (FEMA) – A federal agency that regulates federal actions in floodplains.

Federal Highway Administration (FHWA) – The branch of the U.S. Department of Transportation responsible for administering the funding of federal-aid highway projects.

Federal Railroad Administration (FRA) – The FRA was created by the Department of Transportation Act of 1966 (49 U.S.C. 103, Section 3(e)(1)). The purpose of the FRA is to: promulgate and enforce rail safety regulations; administer railroad assistance programs; conduct research and development in support of improved railroad safety and national rail transportation policy; provide for the rehabilitation of Northeast Corridor rail passenger service; and consolidate government support of rail transportation activities.

Filleting – On double-stack container trains, taking off the top row of containers for intermodal freight rail.

Final Environmental Impact Statement (Final EIS) – The document prepared after circulation of a draft EIS and consideration of comments received. FRA NEPA regulations require that the FEIS identify a preferred alternative, evaluate all reasonable alternatives considered, discuss and respond to substantive comments on the draft EIS, summarize public involvement, and describe the mitigation measures that will be incorporated into the proposed action.

Floodplain – The level area adjoining a river channel that is inundated during periods of high flow.

Freight Train Mile – A freight train operating one mile (also see “Train Mile”).

Geographic Information System (GIS) – A computer-based application used to perform spatial analysis.

Grade – The slope of a railway or road along the direction of travel, normally characterized by the vertical rise per unit of longitudinal distance.

Grade Crossing – A crossing or intersection of highways, railroad tracks, other guideways, or pedestrian walks, or combinations of these at the same level or grade.

Grade separation – The intersection of two roads, or a road and a railway, that cross at different elevations. One roadway passes above or under the other roadway with an overpass or underpass structure.

Greenhouse Gas (GHG) Emissions – Any or all of several gases that negatively affect ambient air quality when released into the atmosphere as part of the exhaust gases and smoke thrown off by internal combustion engines used to propel transportation vehicles. Water vapor, carbon dioxide (CO₂), nitrous oxide, methane, and ozone are the primary greenhouse gases in the Earth's atmosphere.

Gross Domestic Product (GDP) – Gross Domestic Product is one of the major economic indices of the socio-economic development of a region. GDP is equal to the total of added values in the regional economic industries, estimated as a difference between production and intermediate consumption.

Gross Tons – The total weight of a vehicle and the lading, if any, that it is carrying, i.e., the sum of Tare Weight and Revenue Tons (which see).

Gross Tons per Year – The total weight of lading and vehicles carried over a roadway or railroad line of track during a one-year period.

Groundwater Protection Areas – Areas of land designated by water resource agencies through which rainwater or snowmelt percolates to replenish the underlying aquifer in the area of a public well. These areas require special protection because they directly affect the quality and safety of the public drinking water supply.

High-Level Platform – A passenger station platform whose surface is at the same elevation above the rail as the floor of conventional railroad passenger cars, typically 51 inches, to enable stepless boarding and alighting in conformance with ADA requirements.

High Speed Intercity Passenger Rail (HSIPR) Program – The Federal Railroad Administration (FRA) launched the HSIPR Program in June 2009. The HSIPR Program supports a series of strategic transportation goals: building a foundation for economic competitiveness; ensuring safe and efficient transportation choices; promoting energy efficiency and environmental quality; and supporting interconnected livable communities. In the long-term, HSIPR Program funding is intended to build an efficient, high-speed passenger rail network connecting major population centers 100 to 600 miles apart. In the near-term, the program will aid in economic recovery efforts and lay the foundation for this high-speed passenger rail network through planning studies and targeted investments in existing intercity passenger rail infrastructure, equipment, and intermodal connections.

Historic resources – Properties, structures and districts that are listed in or have been determined to be eligible for listing in the National Register of Historic Places.

Interlocking – In rail systems, an arrangement of switch, lock, and signal devices that is located where rail tracks cross, join and/or separate. The devices are interconnected in such a way that their movements must succeed each other in a predetermined order, thereby preventing opposing or conflicting train movements.

Intermodal Freight Transportation – Goods that are loaded into a highway trailer or container, then shipped from origin to destination by moving the trailer or container via some combination of road, rail marine and/or (rarely) air transport.

Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) – The Intermodal Surface Transportation Efficiency Act of 1991 (Public Law 102-240; ISTEA, pronounced *Ice-Tea*) is a **United States federal law** that posed a major change to **transportation planning** and **policy**, as the first U.S. federal legislation on the subject in the post-**Interstate Highway System** era. It presented an overall intermodal approach to highway and transit funding with collaborative **planning**

requirements, giving significant additional powers to **metropolitan planning organizations**. Signed into law on December 18, 1991 by President George H. W. Bush, it expired in 1997. It was preceded by the **Surface Transportation and Uniform Relocation Assistance Act of 1987** and followed by the **Transportation Equity Act for the 21st Century (TEA-21)** and most recently in 2005, the **Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)**

Interstate – A limited access highway that is part of the National System of Interstate and Defense Highways (“Interstate Highway System”).

Interstate Highway System – The network of Interstate Highways established by the Federal-Aid Highway Act of 1956. The statute established a 41,000-mile network of controlled-access highways (expanded to 42,000 miles by legislation in 1968) intended to connect all metropolitan areas with populations greater than 50,000 and all state capitals.

Land and Water Conservation Fund – A system for funding Federal, State and local parks and conservation areas, created by the Land and Water Conservation Fund Act of 1964.

Magnuson-Stevens Fisheries Conservation and Management Act – Legislation (16 U.S.C. 1855(b)) governing all fisheries resources within 320 kilometers (200 miles) of the U.S. coast that established regional Fishery Management Councils and required the preparation of Fisheries Management Plans.

Main Track – A principal track over which all or most of a railroad line’s train traffic moves. Depending on traffic volume, railroad lines may have a single main track, or two or multiple main tracks.

Maintenance of way – The upkeep and repair of a railroad’s fixed property (such as tracks and bridges); the process of maintaining railroad roadbed (such as rail, ties, ballast, bridges, etc.).

Maximum Authorized Speed (MAS) – The top speed (mph) at which trains are allowed to operate in a particular section of track; generally specified in the employees’ timetable.

Meet – An operating event wherein two trains, one running in each direction, pass each other; can occur without restriction on a line with two or more main tracks, but must occur at a passing siding on a line with a single main track.

Metro North Railroad (Metro-North) – The unit of the New York Metropolitan Transportation Authority that operates commuter rail lines serving Grand Central Terminal. Metro-North is the host railroad for Amtrak trains between Spuyten Duyvil and Poughkeepsie.

Metropolitan Statistical Area (MSA) – As defined by the United States Office of Management and Budget, a MSA includes at least one city with 50,000 or more inhabitants, or an urbanized area (of at least 50,000 inhabitants), and a total metropolitan population of at least 100,000. Each MSA has its own metropolitan planning organization as decreed by federal law.

Mitigation – Actions that avoid, minimize, or compensate for potential adverse impacts.

Multi-modal – The act of providing alternative modes or choices of transportation service, such as automobile, bus, rail, taxi, etc.

National Ambient Air Quality Standards (NAAQS) – The prescribed level of pollutants in the outside air that cannot be exceeded during a specified time in a specified geographic area.

National Environmental Policy Act of 1969, as amended (NEPA) – The federal legislation that requires an interdisciplinary approach in planning and decision-making for federal-aid actions. The Act includes requirements for the contents of environmental impact statements that are to accompany every recommendation for major federal actions significantly affecting the quality of the

human environment. The interdisciplinary study approach includes the analysis of potential impacts to the natural, social and economic environment.

National Heritage Area – Established by Congress to promote historic preservation and an appreciation of the history and heritage of designated sites. National Heritage Areas are administered by state or local governments or non-profit or private corporations and are not federally owned and managed.

National Historic Landmark (NHL) – A historic building, site, structure, object, or district that represents an outstanding aspect of American history and culture.

National Historic Site – Usually, a national historic site contains a single historical feature that was directly associated with a person or family of historical significance. These areas may also be associated with specific historic periods that are important in American history.

National Memorial – A place designated by the U.S. Congress for protection as a memorial to a historic person or event.

National Natural Landmark (NNL) – The National Registry of Natural Landmarks includes nationally significant geological and biological features.

National Priority List (NPL) – The “Superfund” statute (42 U.S.C. Sect. 9601) requires the EPA to establish a National Priorities List of sites which are to be given top priority consideration for removal of hazardous substances and remedial action.

National Register of Historic Places – A list of structures, sites and districts of national historical significance as determined by the Advisory Council on Historic Preservation under the National Historic Preservation Act.

National Wetlands Inventory (NWI) – A program administered by the U.S. Fish and Wildlife Service for mapping and classifying wetland resources in the United States.

National Wildlife Refuge – The National Wildlife Refuge System, managed by the U.S. Fish and Wildlife Service, is the nation’s system of public lands and waters set aside to conserve fish, wildlife and plants.

Natural Resources Conservation Service (NRCS) – Formerly the Soil Conservation Service, NRCS is a unit within the United State Department of Agriculture that is responsible for administering the Farmland Protection Policy Act.

Nitrogen Oxides (NO_x) – Nitric oxide (NO) and Nitrogen dioxide (NO₂) are collectively referred to as oxides of nitrogen (NO_x). NO forms during high temperature combustion processes. NO₂ forms when NO further reacts in the atmosphere. NO_x reacts with the sunlight to form ozone, a colorless gas associated with smog or haze conditions. Ozone is a pollutant regulated by the Clean Air Act Amendments of 1990.

Noise receptor – Locations that may be affected by noise: sensitive receptors include residences, parks, schools, churches, libraries, hotels, and other public buildings.

Non-Attainment Area – A geographic area in which levels of a criteria air pollutant fail to meet the health-based primary standard (National Ambient Air Quality Standard) for the pollutant. Non-Attainment areas are defined using federal pollutant limits set by the U.S. Environmental Protection Agency.

On-Time Performance – Arrival time of a public transportation vehicle at an intermediate or final destination station at the time designated in the operating timetable for that event. For contract enforcement purposes, usually taken to mean arrival at the trip’s final destination station at or no more than a specified number of minutes after the published arrival time.

Overhead Bridges – With reference to the railroad tracks, overhead bridges are bridges that carry another feature, such as a road, over the referenced tracks.

Overtake – An operating event wherein a faster train passes a slower train running in the same direction; can occur between appropriately placed crossovers on a line with two or more main tracks, but must occur at a passing siding on a line with a single main track.

Ozone – A gas which is a variety of oxygen. Ozone is a pollutant regulated by the Clean Air Act Amendments of 1990. Ground-level ozone is the main component of smog. Ozone is not directly emitted by motor vehicles, but is formed when oxides of nitrogen react with sunlight.

Participating Agency – A federal, state, tribal, or local government agency that may have an interest in the project.

Passenger Mile (PM) – A basic unit of productivity defined as one passenger riding one mile.

Passenger Miles Traveled (PMT) – PMT is a measure of passenger demand and trip length. One passenger traveling one mile constitutes one passenger-mile. One passenger riding ten miles = 10 PMT; 50 passengers each riding 100 miles = 5,000 PMT.

Passenger Rail Investment and Improvement Act of 2008 (PRIIA) – PRIIA was enacted in 2008 as Public Law 110-432. PRIIA authorized a high-speed grant program for FY 2009 through FY 2013 to improve intercity passenger rail service, operations and facilities. PRIIA also directed the U.S. Secretary of Transportation to develop a long-range national rail plan that is consistent with approved State rail plans and the rail plans of the nation.

Passing Track – A track adjacent to a main or secondary track used primarily for trains to execute meet or overtake movements.

Peak hour – The hour of the day when traffic volume on a given roadway is highest. A separate peak hour can be defined for morning and evening periods. On a public transportation facility, peak hour usually refers to the most heavily patronized hour of the operating day.

Pervious Surface – Relating to hydrology, a surface through which precipitation can penetrate into the ground, reducing direct runoff or perching (as compared to an impervious surface where no precipitation is able to penetrate into the ground, thereby making it necessary to collect more runoff into drainage systems). Some newer road surfacing mixes are designed to be pervious.

Positive Train Control (PTC) – A system that prevents train accidents due to operator errors. PTC consists of locomotive-borne electronic equipment linked to central office dispatching systems via wireless data networks. If a train operator exceeds his/her movement authority, the train is sent a wireless signal and is automatically stopped.

Prime Farmland – As defined by the USDA, land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses.

Prime Farmland Soil – Soil map units that are designated by the Natural Resources Conservation Service as having the properties needed to produce sustained high yield crops when managed with modern farming techniques.

Protected Stream – A stream or small water body along a stream that has a water quality classification of C(T) (trout supporting waters) or higher and is subjected to the stream protection provisions of the NYSDEC Protection of Waters regulations.

Record of Decision (ROD) – The document, prepared by the Federal Highway Administration or Federal Railroad Administration, that presents the basis for the Federal agency action, summarizes any mitigation measures to be incorporated, and documents any required Section 4(f) approvals. No

Federal agency action may be undertaken until a Record of Decision has been signed. A Record of Decision is prepared no sooner than 30 days after the public release of the FEIS.

Revenue Tons – The portion a total vehicle weight represented by the weight of the lading the vehicle is carrying.

Ridership – The number of passengers using a vehicle (e.g., a train) or group of scheduled vehicles (e.g., several trains providing a complete schedule such as the *Empire Service*); may be measured for various units of time: per hour, day, week, month or year, depending on the intended use of the data.

Rolling Stock – The wheeled vehicles, both powered and unpowered, collectively used on a railway, including locomotives, passenger coaches, freight wagons and guard's vans.

Section 106 of the Historic Preservation Act (Section 106) – The National Historic Preservation Act of 1966 (16 U.S.C. 470f), Section 106, requires Federal agencies to take into account the effects of their undertakings on properties included in or eligible for inclusion in the National Register of Historic Places and to afford the Advisory Council on Historic Preservation the opportunity to comment on such undertakings.

Section 4(f) of the U.S. Department of Transportation Act of 1966 (49 U.S.C., Section 303) (Section 4(f)) – Legislation protecting publicly owned parks, public recreation areas, historic properties or wildlife and waterfowl refuges. The statute states that no Department of Transportation project may use land from these areas unless there is demonstrated to be no prudent and feasible alternative to using the land, and the project includes all possible planning to minimize harm resulting from the use.

Section 404 of the U.S. Clean Water Act (Section 404) – The Federal Water Pollution Control Act Amendments of 1972 (33 U.S.C. 401 et seq.) is the enabling legislation for protection of waters of the United States by the Army Corps of Engineers and the U.S. Environmental Protection Agency.

Section 6(f) of the U.S. Land and Water Conservation Fund Act (Section 6(f)) – Legislation that provides for the public purchase and preservation of tracts of land.

Service Road – A roadway, often a minimally graded and improved single lane, providing access to rubber-tired maintenance of way vehicles along a length of otherwise inaccessible railroad line.

Service Yard – A rail terminal facility, usually consisting of system of turnouts (which see) and parallel tracks, as well as driveways placed between the tracks for rubber-tired maintenance vehicles; used to store passenger trains between revenue runs, restock their supplies, and perform cleaning and other light servicing tasks.

Side Platform – A passenger platform located to the outside of the tracks, and normally serving only the track immediately adjacent to the platform.

Siding – A track adjacent to a main or secondary track, for meeting, passing, or storing cars or trains.

Significant Wildlife Habitat – Wildlife habitats, including deer wintering yards, waterfowl and wading bird habitat, seabird nesting habitat, and significant vernal pools, that are protected under 38 M.R.S.A. § 480-B.

Sole Source Aquifer (SSA) – An aquifer designated by EPA as the “sole or principal source” of drinking water for a given aquifer service area; that is, an aquifer that is needed to supply 50% or more of the drinking water for that area and for which there are no reasonably available alternative sources should the aquifer become contaminated.

Stakeholder – All parties with a vested interest in the project. Such parties include the general public, federal and state agencies, Amtrak, CSX, Metro-North Railroad and other railroads, transportation

agencies/metropolitan planning organizations, elected officials, corridor municipalities, business and interested non-governmental organizations.

State Environmental Quality Review Act (SEQR) – A project review process that requires the sponsoring or approving governmental body to identify and mitigate the significant environmental impacts of the activity it is proposing or permitting.

State Implementation Plan (SIP) – A plan created under The 1990 Clean Air Act Amendments (CAAA) that establishes emission reduction requirements for ozone and carbon monoxide non-attainment areas. Proposed projects must demonstrate that the impacts of their emissions are consistent with the appropriate SIP.

Stormwater Pollution Prevention Plan (SWPPP) – A plan required for major construction projects under the EPA's National Pollutant Discharge Elimination System (NPDES) general permit for construction activities. The SWPPP is required to address measures to prevent erosion, sedimentation, and other potential discharges of pollutants to water bodies and wetlands.

Study Area – The area within and surrounding the project corridor that was studied for the purposes of determining project-related impacts to resources resulting from implementing any of the studied alternatives. The study area is centered about the existing or prospective rail line centerlines and varies from 300 feet to ½ mile in width, depending on the resource. The study area follows the existing railroad corridor for the 90 mph and 110 mph alternatives; while for the 125 mph alternative, the prospective railroad corridor follows a markedly different alignment through the Empire Corridor West.

Teragrams of Carbon Dioxide Equivalent – Equivalent to one million metric tons of carbon dioxide equivalent, unit used in greenhouse gas analysis.

Terminal Facility – The station, platforms and associated tracks, and Service Facility (which see) provided at or in the vicinity of the end station on a railroad or other public transportation route.

Threatened Species – Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Tiering – Staged environmental review process applied to the environmental review of complex projects.

Tier 1 EIS – Intent in the Tier 1 EIS is to make corridor-level decisions regarding the level of intercity passenger rail service provided in the corridor and evaluate and identify conceptual alternatives to be further considered in the Tier 2 NEPA document(s).

Tier 2 – The Tier 2 NEPA document(s) would explore in greater detail the component projects of the preferred corridor-level alternatives chosen in Tier 1. Tier 2 would include analysis based on engineering designs, identification of site-specific environmental consequences, and development of site-specific mitigation measures for the preferred alternative.

Tonnage – Weight, as measured in short tons (1 short ton = 2,000 pounds).

Track Centers, Distance Between – Measured distance in feet or meters between the centerlines of two adjacent and parallel railroad tracks.

Track Class – The track safety standards of the FRA establish nine specific classes of track (Class 1 to Class 9), plus a category known as Excepted Track. The difference between each Class of Track is based on progressively more exacting standards for track structure, geometry, and inspection frequency. Railroads determine the Class of Track to which each segment of track belongs based on business and operational considerations. Once the designation is made, FRA holds railroads accountable for maintaining the track to the corresponding standards for that particular class.

Train Mile – A consist of a locomotive with or without coupled railroad cars moved together one train mile. A train of one locomotive and five cars moved one mile will generate one train mile, one locomotive mile, five car miles, and six vehicle miles (also see “Car Mile”).

Transportation Equity Act for the 21st Century (TEA-21) – The Transportation Equity Act for the 21st Century was enacted June 9, 1998 as Public Law 105-178. TEA-21 authorizes the Federal surface transportation programs for highways, highway safety, and transit (including intercity rail passenger projects) for the 6-year period 1998-2003. The TEA 21 Restoration Act, enacted July 22, 1998, provided technical corrections to the original law.

Transportation Improvement Program (TIP) – A staged multiyear program of transportation projects funded by the Federal Highway Administration and Federal Transit Administration.

Travel Time – The elapsed time for a passenger or a vehicle to move between two defined points; an “origin” and a “destination.” May be broken down into sub-units describing portions of a trip, e.g.:

- Trains: Running times between each pair of passenger stations.
- Passengers: Sub-parts of an origin-to-destination trip, e.g.: Origin Access Time (origin to bus stop); Feeder (bus to railroad station); Line Haul (train to destination city); Destination Access (walk or taxi or bus from railroad station to destination).

Turnout – A track switch allowing movement of a railroad train from one track to another.

Undergrade Bridges – With reference to the railroad tracks, undergrade bridges are bridges that carry the referenced tracks over another feature such as a road, water bodies, other railroad tracks, etc.

Unit Train – A railroad freight train of uniform consistency that remains coupled, and that transports a single commodity directly from producer to a specific destination and that, after unloading, returns to the point of origin ready for another load.

United States Army Corps of Engineers (U.S. ACE) – A federal agency that administers Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act; its regulatory programs address wetlands and waterways protection.

United States Department of Agriculture (USDA) – A federal agency responsible for administering programs that address farming issues

United States Environmental Protection Agency (U.S. EPA) – A federal agency responsible for administering programs that address environmental issues.

United States Fish and Wildlife Service (U.S. FWS) – A federal agency responsible for addressing the protection of fish and wildlife including rare, threatened, or endangered species. The USFWS plays an advisory role in the Section 404 regulatory program administered by the U.S. Army Corps of Engineers.

United States Geological Survey (USGS) – A scientific agency of the United States Government tasked with studying the landscape of the United States, its natural resources, and the natural hazards that threaten it. The USGS is a fact-finding research organization with no regulatory responsibility.

Vehicle miles traveled) – The number of vehicle miles of travel (VMT) is an indicator of the travel levels on the roadway system by motor vehicles. VMT is estimated for the given time period. This estimate is based upon traffic volume counts and roadway length.

Vernal pool – A naturally occurring temporary pool of surface water that provides breeding habitat for certain amphibian and invertebrate species.

Volatile Organic Compounds (VOCs) – Colorless gaseous compounds originating, in part, from the evaporation and incomplete combustion of fuels. In the presence of sunlight VOCs react to form ozone, a pollutant regulated by the Clean Air Act Amendments.

Watershed – A region or area that contains all land ultimately draining to a water course, body of water, or aquifer.

Wetland – Areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Wildlife Management Area (WMA) – Lands owned by New York State under the control and management of the New York State Department of Environmental Conservation's Division of Fish, Wildlife and Marine Resources. These lands have been acquired primarily for the production and use of wildlife although most WMA's also provide good opportunities for hiking, cross-country skiing, bird watching, or quiet enjoyment of nature.

Wild and Scenic River – A river or river segment, designated by the National Park Service, because of the outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural or other similar values (16 U.S.C. 1271-1287).

List of Preparers

HNTB, Lead Consultant

Jim Cartin –Senior Project Manager, Public Involvement and Agency Coordination

Bachelors, Industrial Management. Over 40 years of experience in rail passenger, freight and intermodal program development, finance strategies, capital program, railroad negotiations and agency coordination.

Wes Coates – Rail Operations Analysis and Primary Developer and Author of Service Development Plan

Masters, Business Administration; Bachelors, Managerial Economics. Over 35 years of experience directing operations and maintenance of passenger railroad systems, including developing service strategies.

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Masters, Environmental Science. More than 7 years of experience in environmental planning, including transportation projects.

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BS in Civil Engineering. MS in Urban & Environmental Studies. 30 years of public/private transportation and planning experience with major projects and corridor studies across New York State.

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Leah Wener, RLA – Update of Socioeconomic Conditions

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Ph.D., Mechanical Engineering. More than 35 years of engineering experience specializing in environmental analysis and the management of large interdisciplinary environmental projects with expertise in air quality and noise analyses.

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Weixiong Wu, Ph.D.- Noise and Vibration

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Jillian Mauer, Environmental Scientist –Contaminated and Hazardous Materials

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Matt Santo, Environmental Scientist – Wetlands, Floodplains, Surface Waterbodies and Watercourses, Wild, Scenic and Recreational Rivers, Navigable Waters, Aquifers, Environmental Justice

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Rosalie Wilson, Biologist – Wetlands, General Ecology and Wildlife Resources, Critical Environmental Areas

Bachelors, Environmental Science. More than 7 years experience in ecology, biology and wetlands.

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High Speed Rail Empire Corridor

Tier 1 Final Environmental Impact Statement Volume 2



Prepared by:
HNTB New York Engineering
and Architecture, PC

In association with:
Clough, Harbour & Associates, LLP
Louis T. Klauder & Associates
AKRF, Inc.
Pinyon Environmental, Inc.



U.S. Department of Transportation
Federal Railroad Administration

High Speed Rail Empire Corridor Program
Tier 1 Final Environmental Impact Statement

This Tier 1 Final Environmental Impact Statement (EIS) consists of five volumes:

Volume 1 Environmental Impact Statement, which includes:

- Executive Summary
- Chapter 1, Introduction and Purpose and Need
- Chapter 2, Existing Transportation Conditions and Major Markets
- Chapter 3, Alternatives
- Chapter 4, Social, Economic, and Environmental Considerations
- Chapter 5, Financial Capacity
- Chapter 6, Comparison of Alternatives
- Chapter 7, Comments and Coordination
- References, Acronyms, Glossary of Terms, and List of Preparers

Volume 2 Appendix A - Track Schematics

Track schematic (11"x17") plans of the Base Alternative and four Build Alternatives

Volume 3 Appendices B through H

- Appendix B Ridership and Revenue Forecasting
- Appendix C Alternatives Development and Screening Report
- Appendix D Rail Network Operations Simulation
- Appendix E Existing Transportation Conditions Supporting Documentation
- Appendix F Capital, Operating, and Maintenance Costs Estimating Methodology
- Appendix G Environmental Inventory and Impact Assessment
- Appendix H Service Development Plan

Volume 4 Appendices I through J

- Appendix I Agency Correspondence
 - Cooperating Agencies Correspondence
 - Participating Agencies Correspondence
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- Appendix J CSXT and NYSDOT Agreements

Volume 5 Appendix K

- Appendix K Responses to Comments on the Tier 1 Draft EIS

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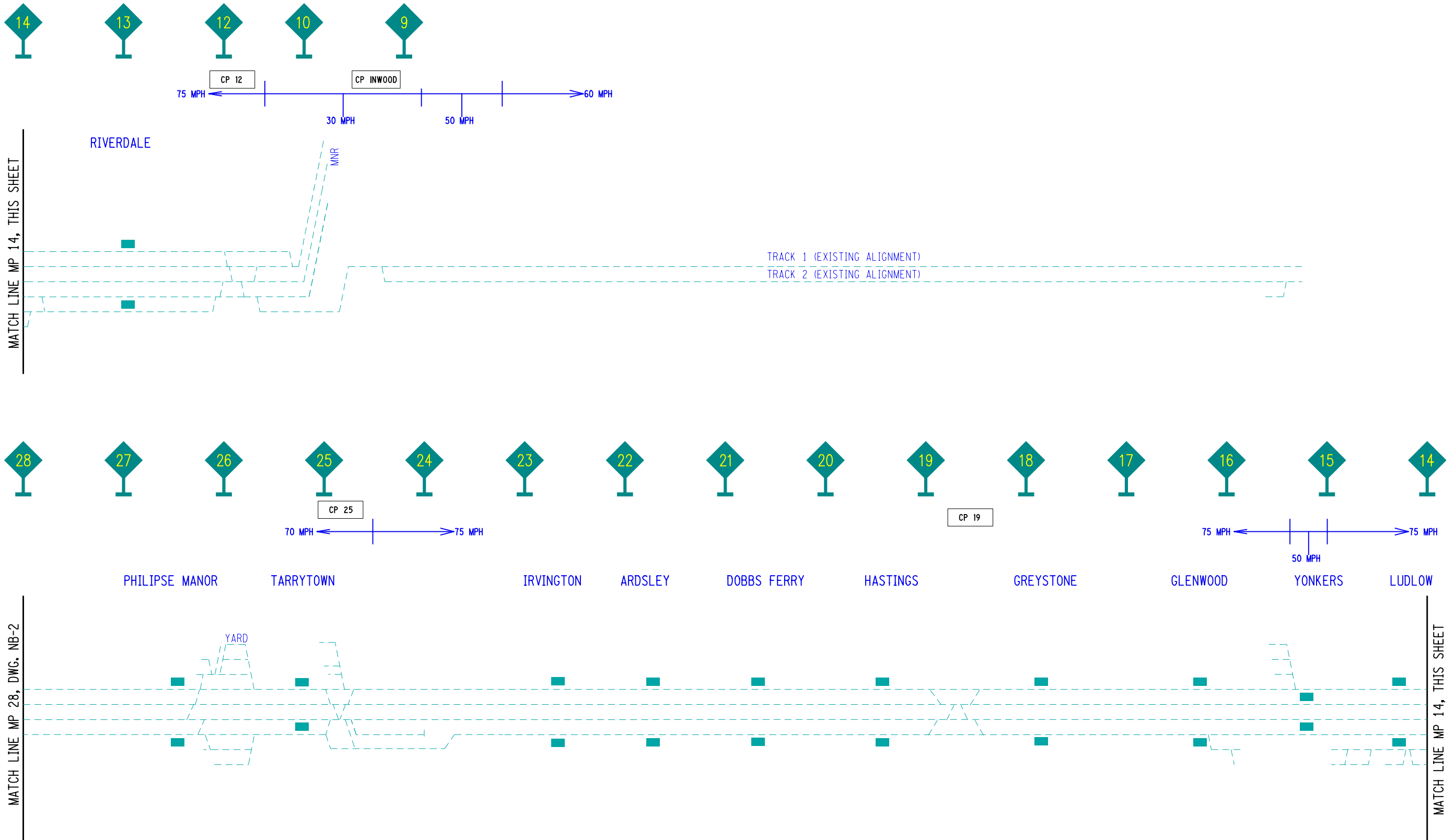
Track Schematics for Alternative 90B

Track Schematics for Alternative 110

Track Schematics for Alternative 125

Track Schematics for Base Alternative

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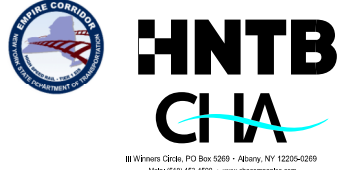



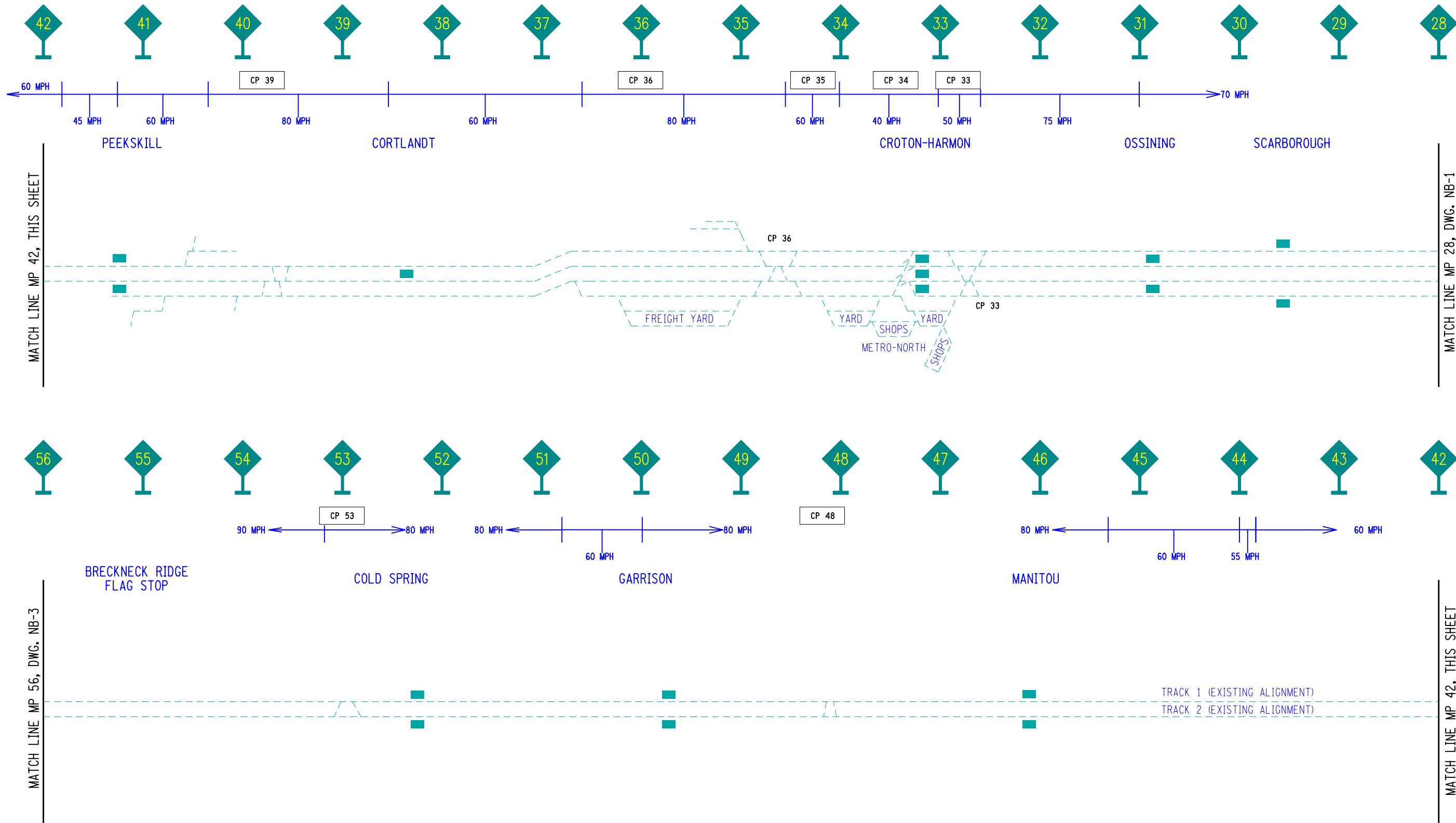
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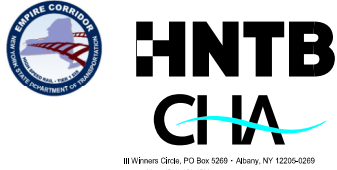

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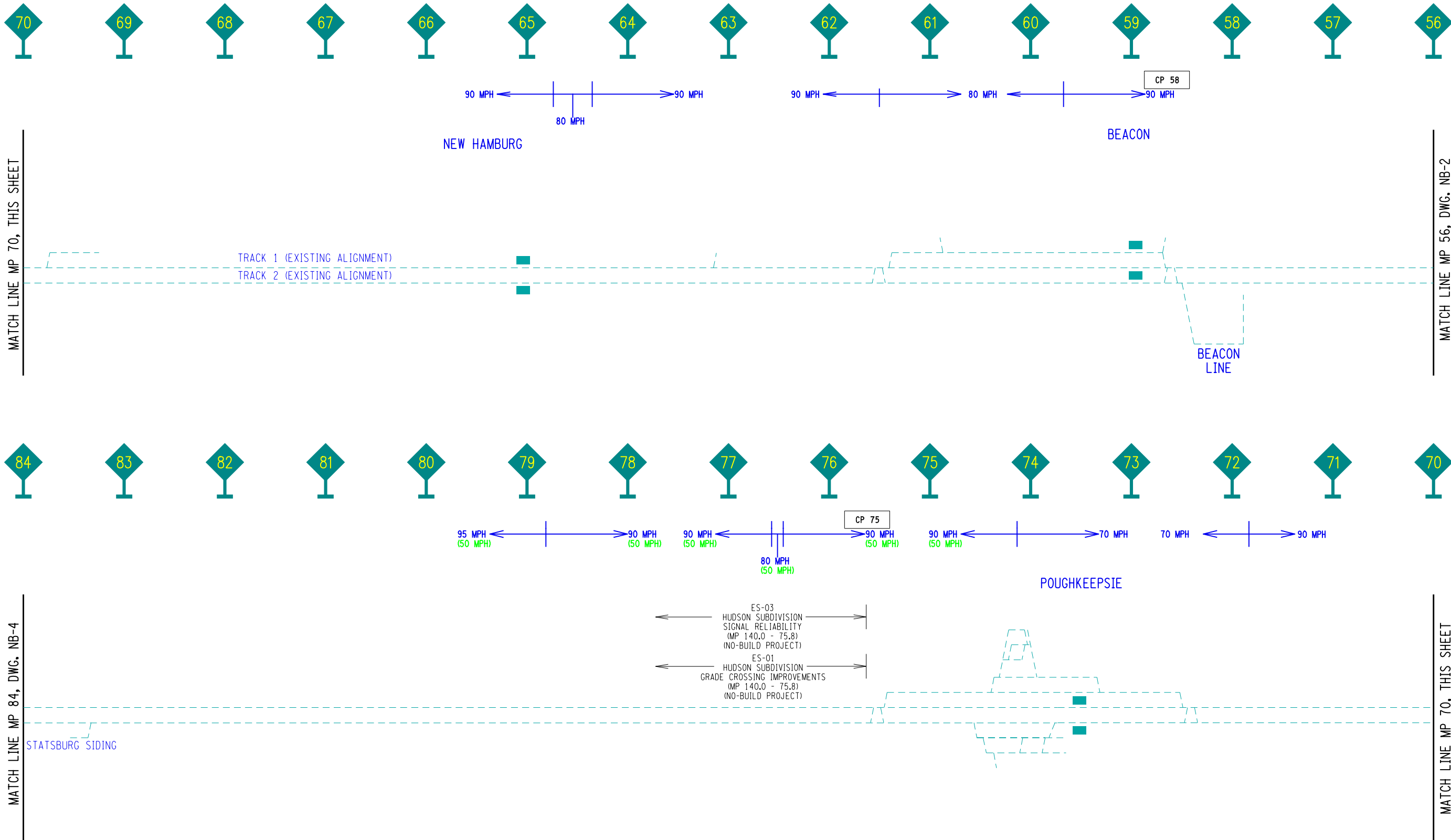
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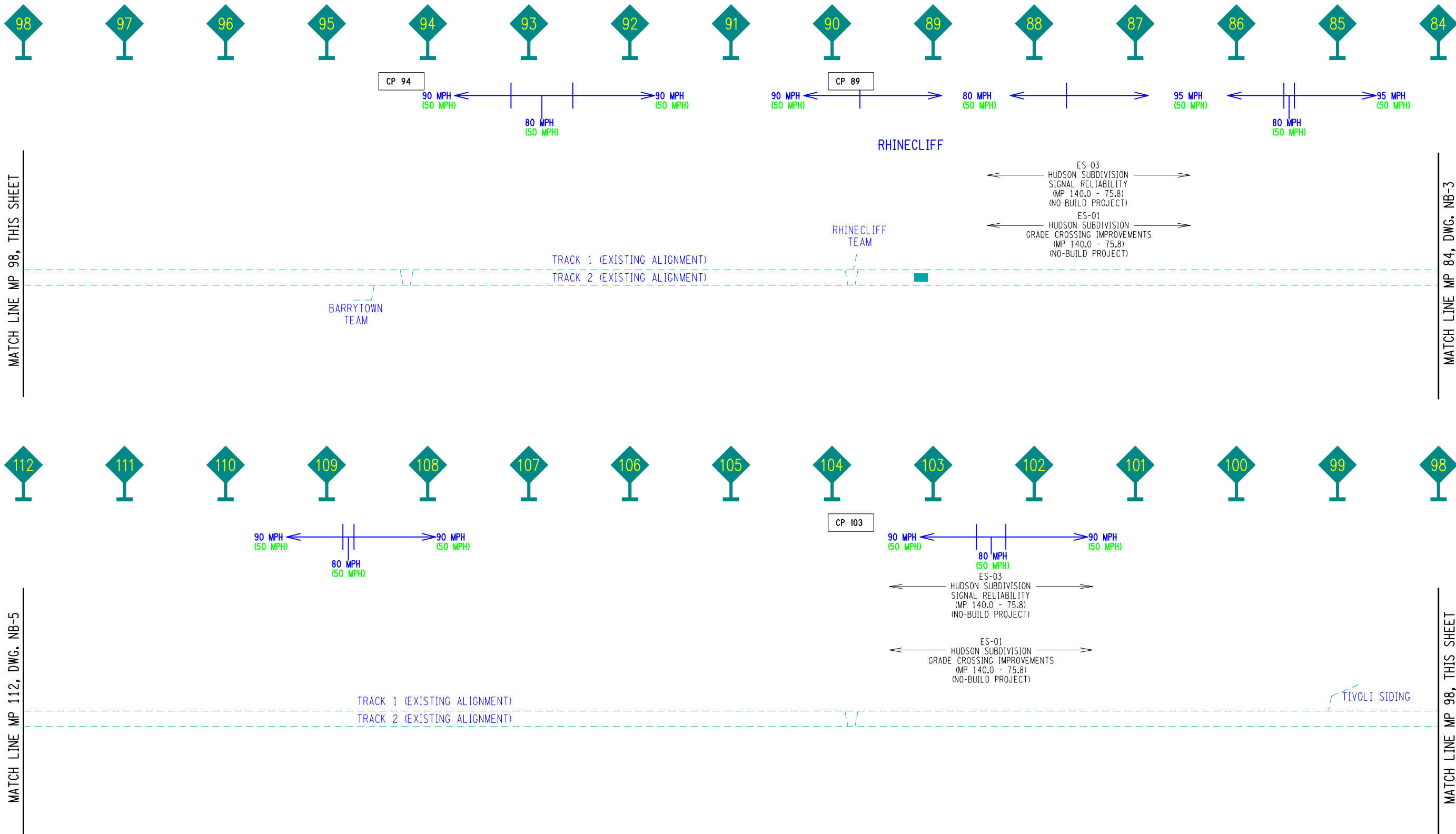
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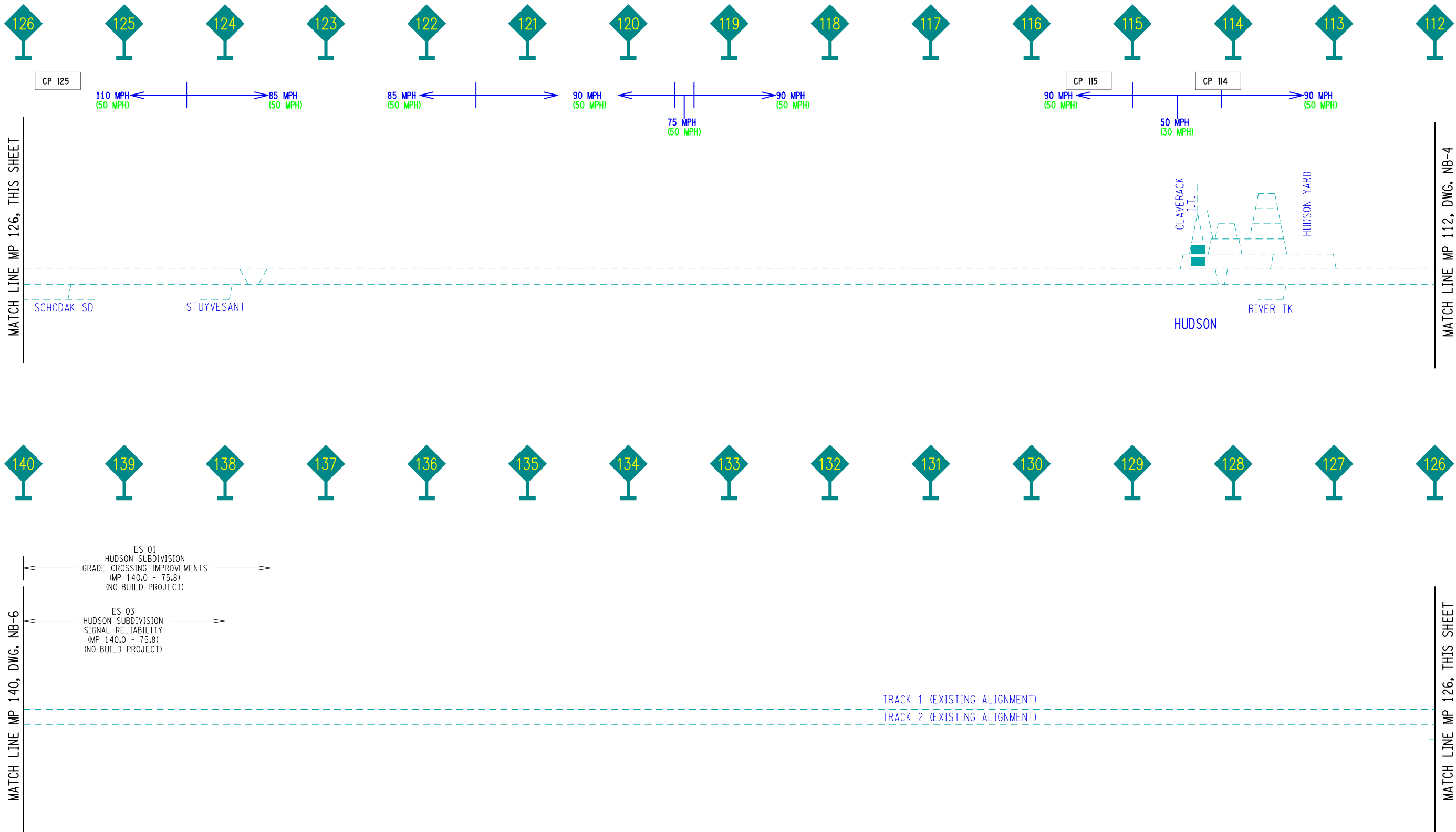
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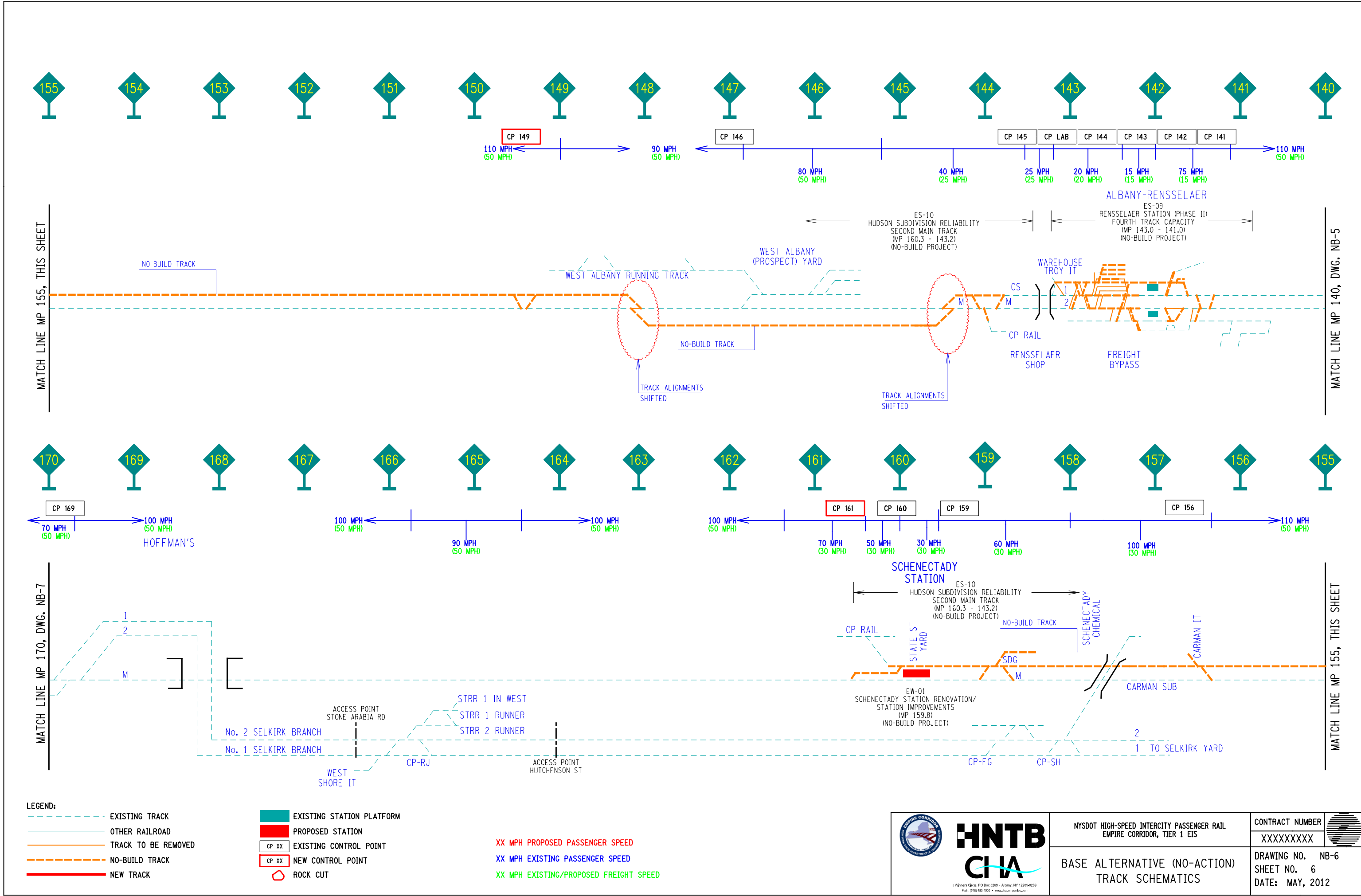


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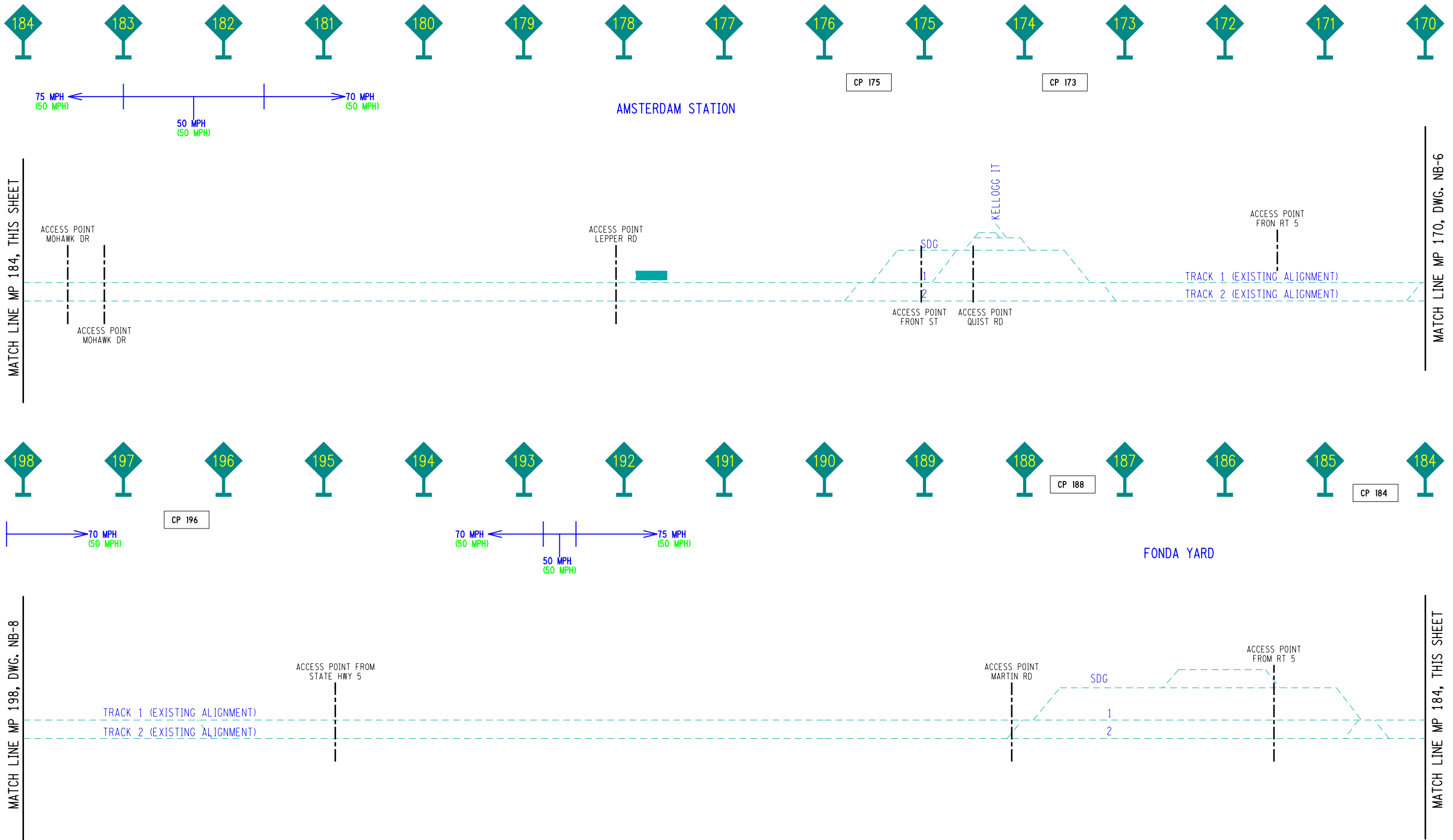
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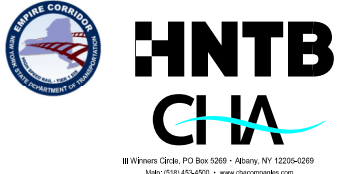

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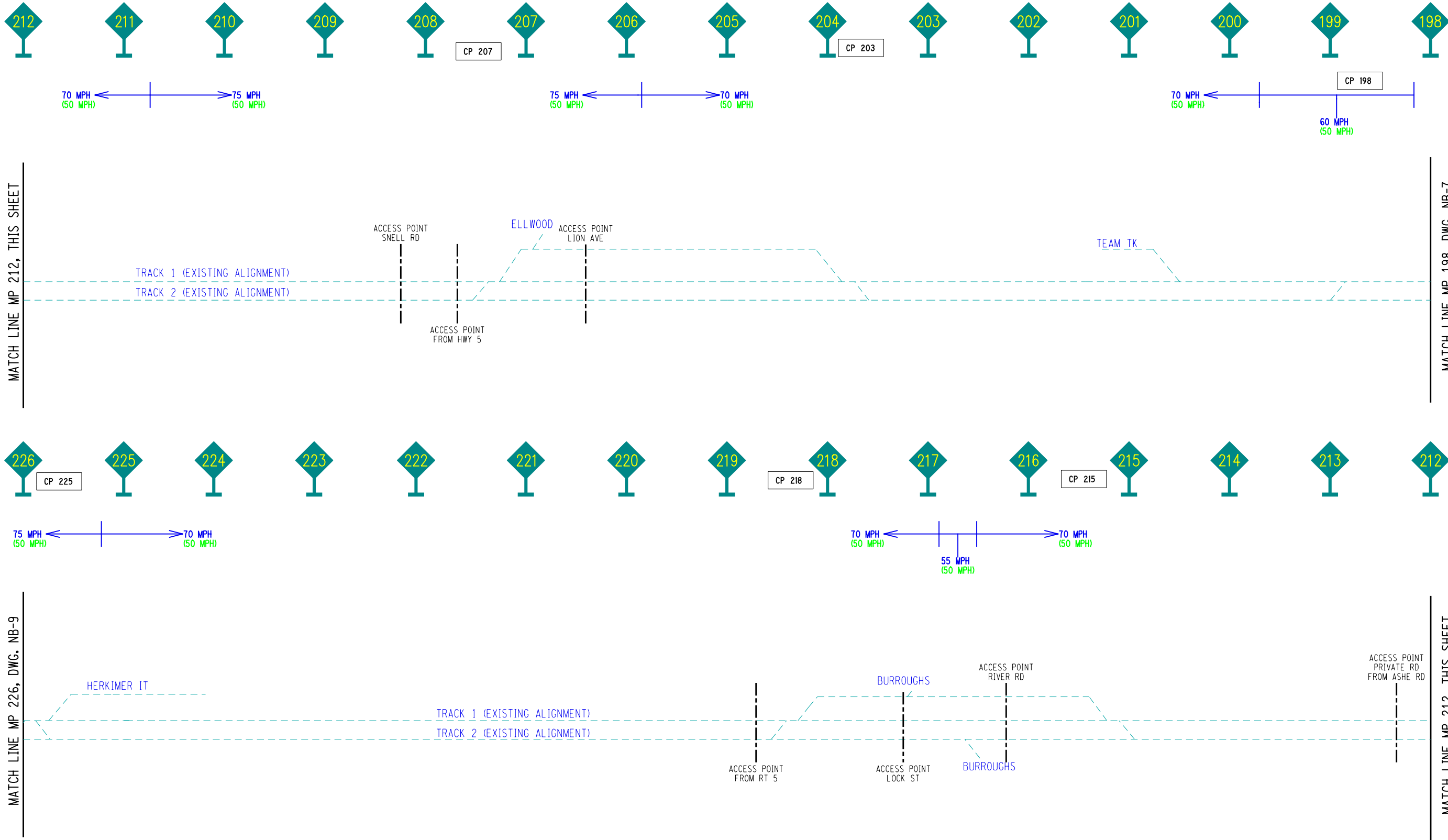
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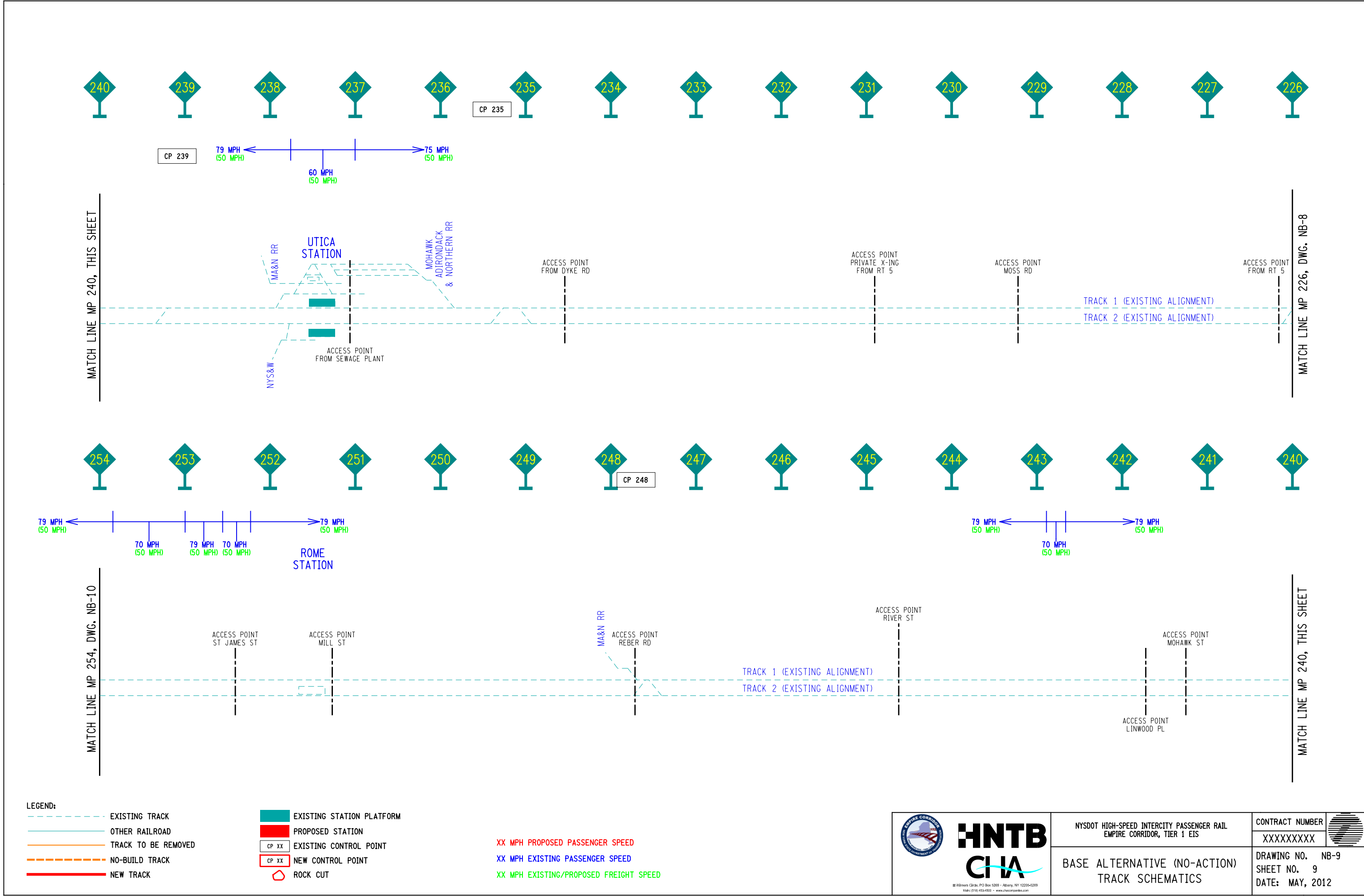
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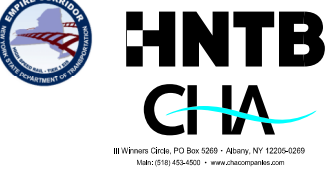
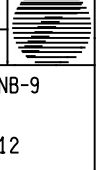
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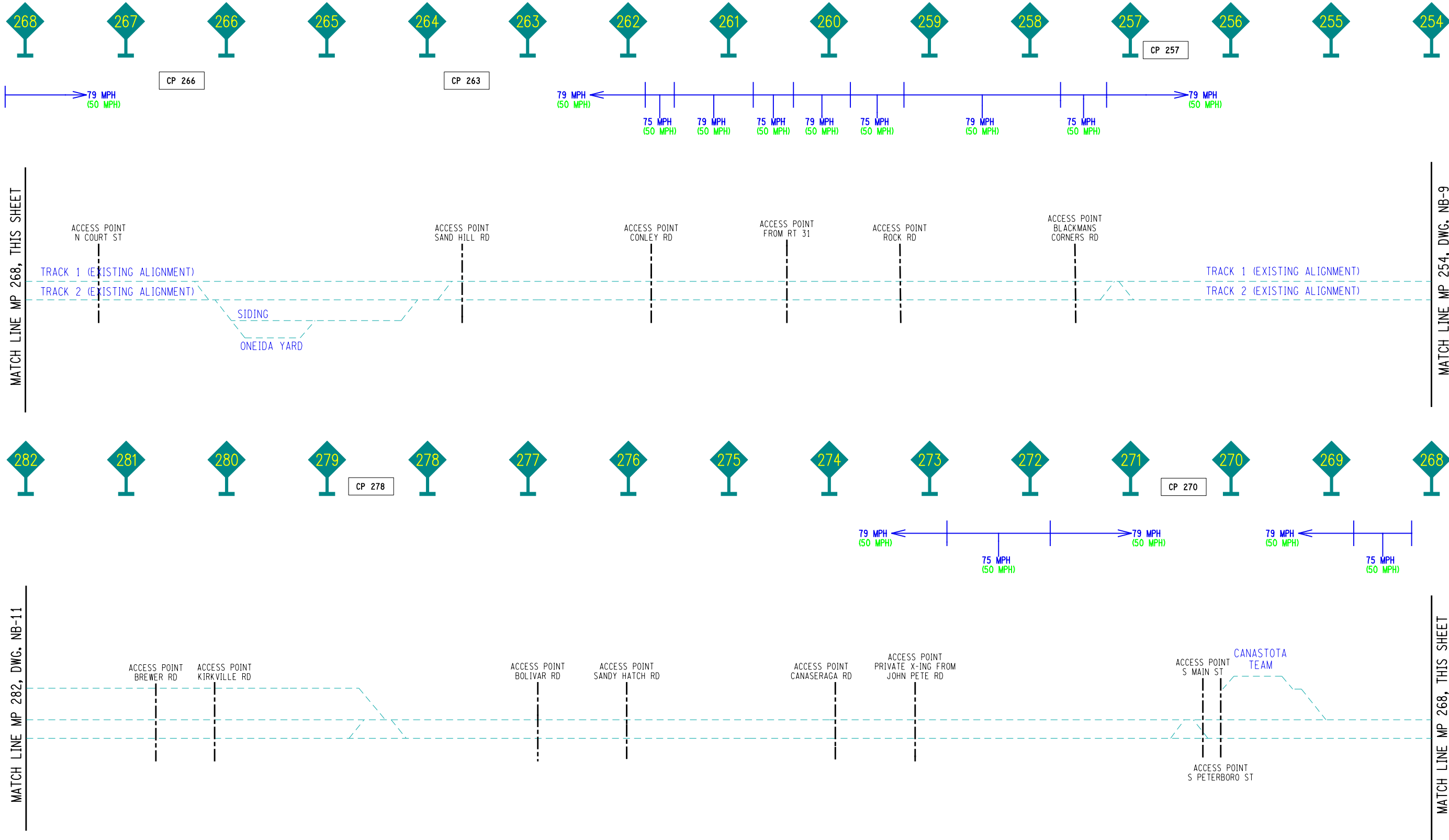
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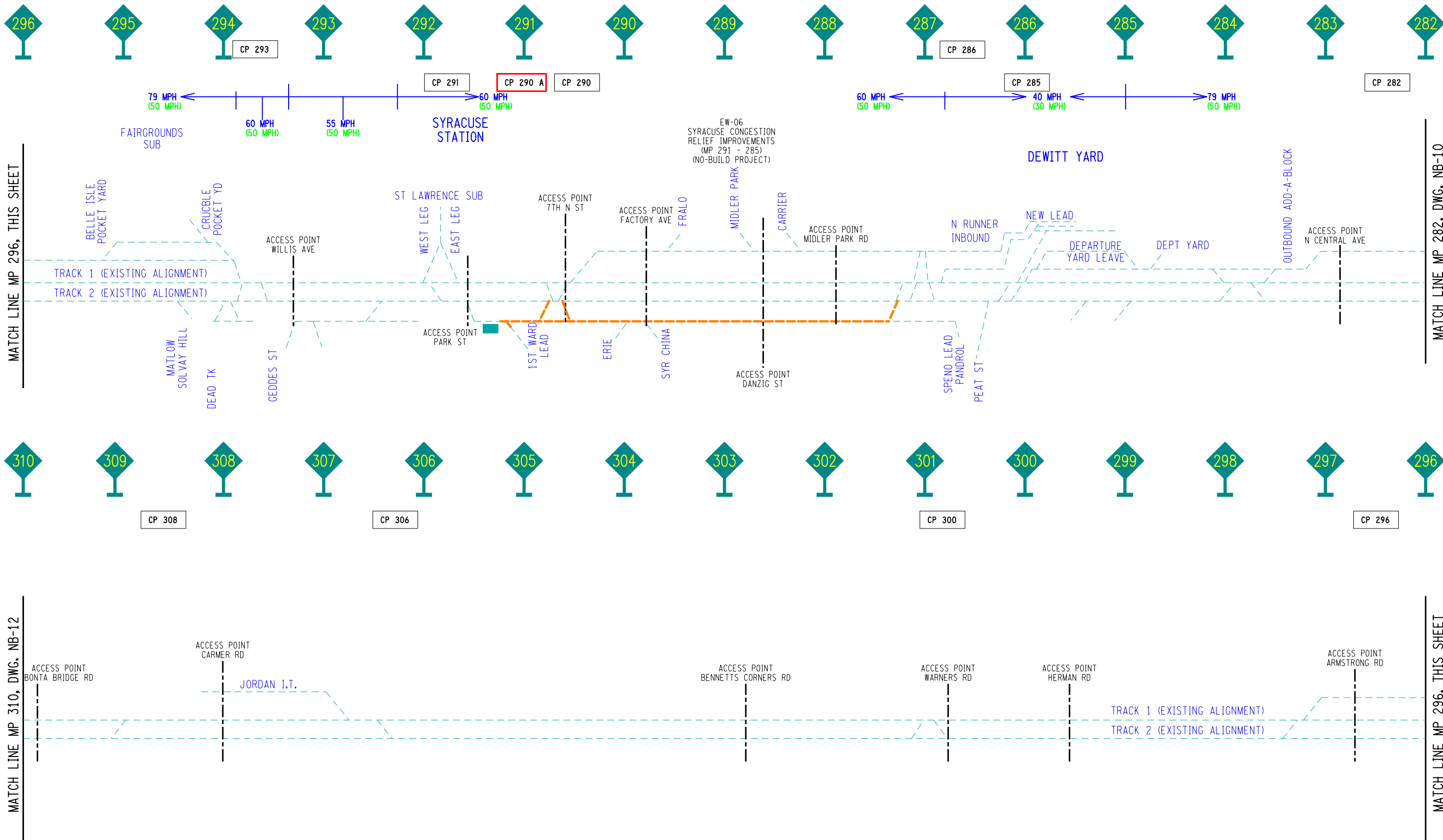
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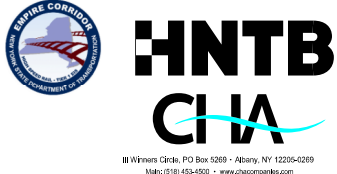

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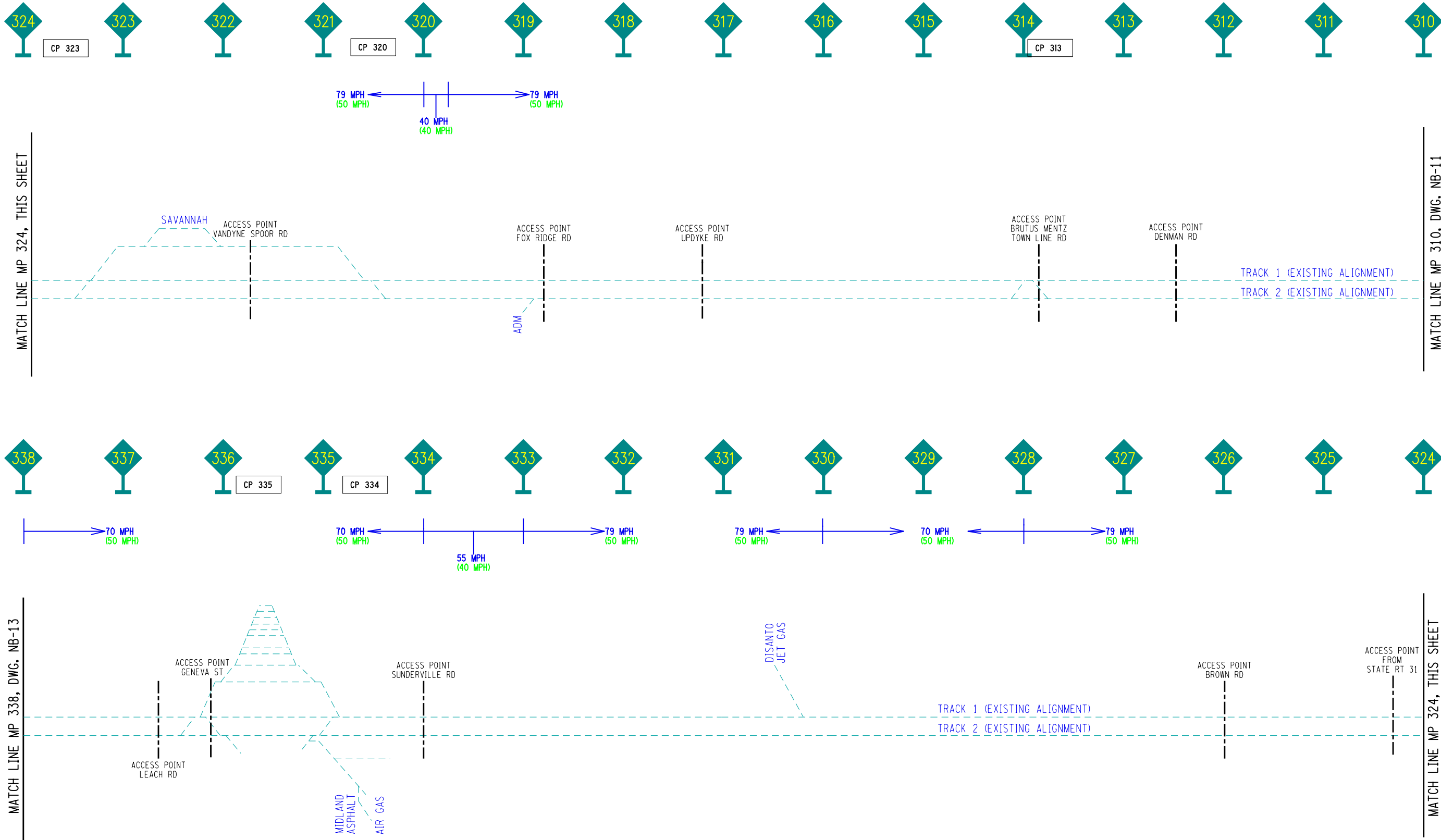
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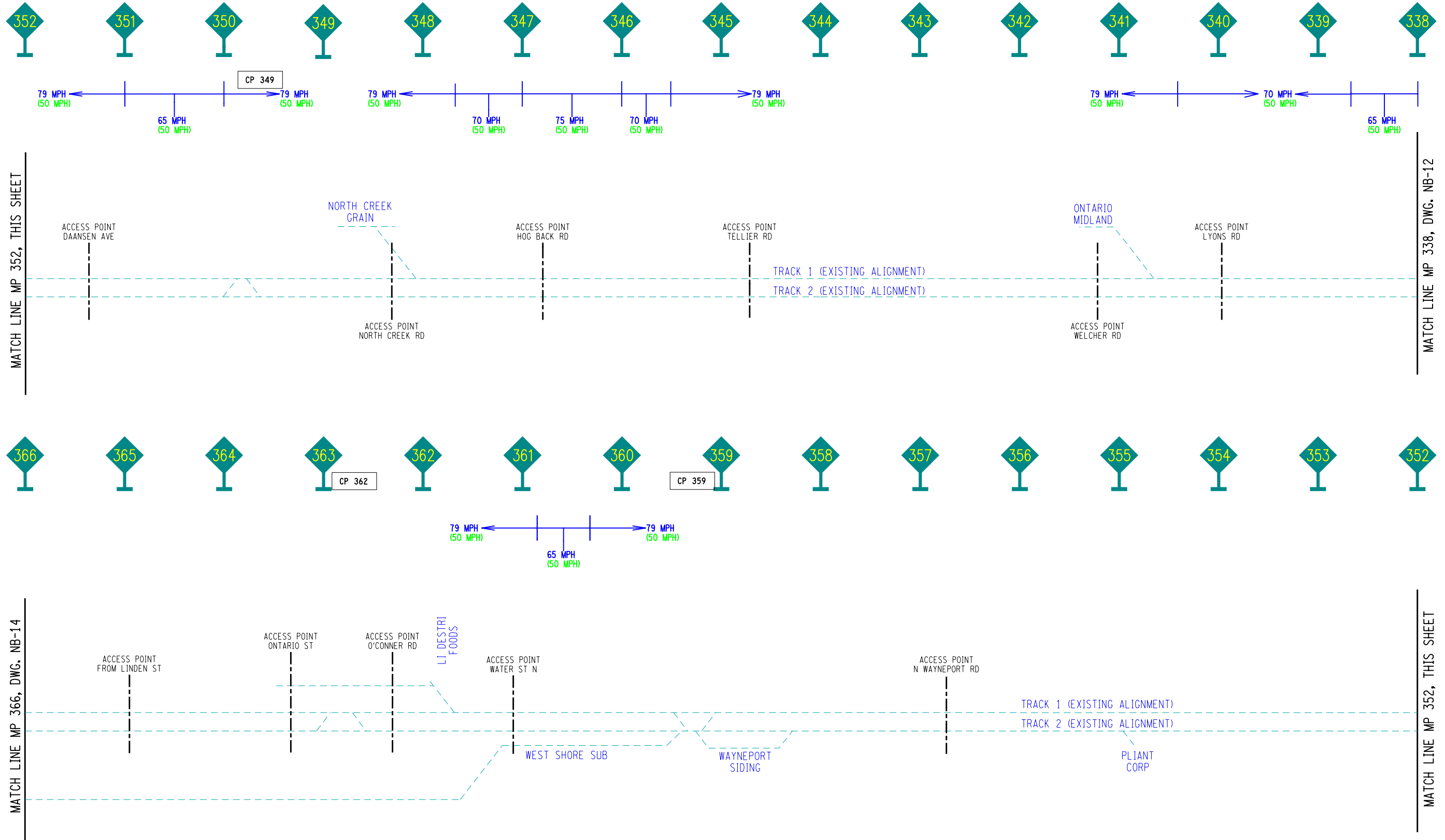
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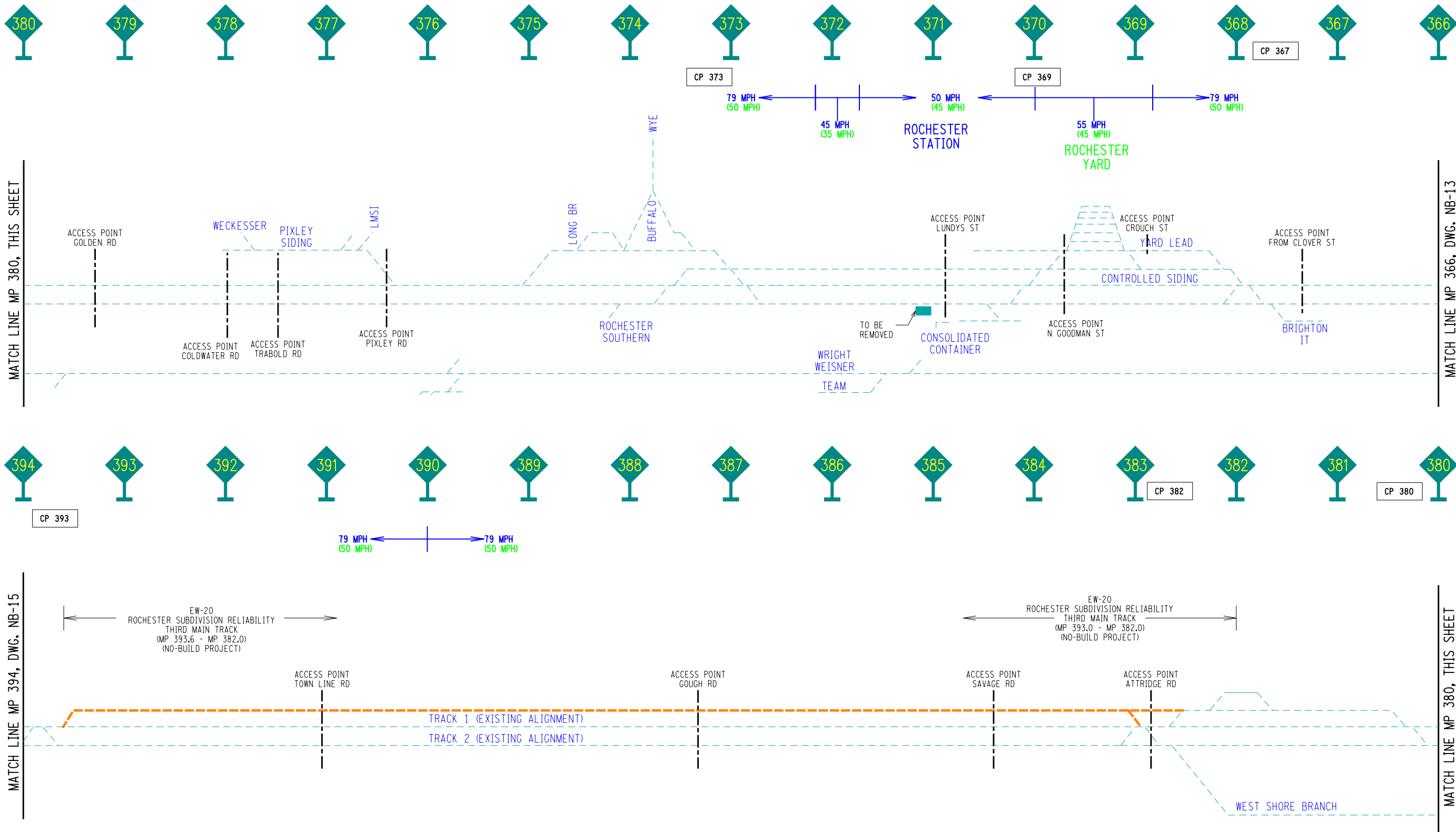
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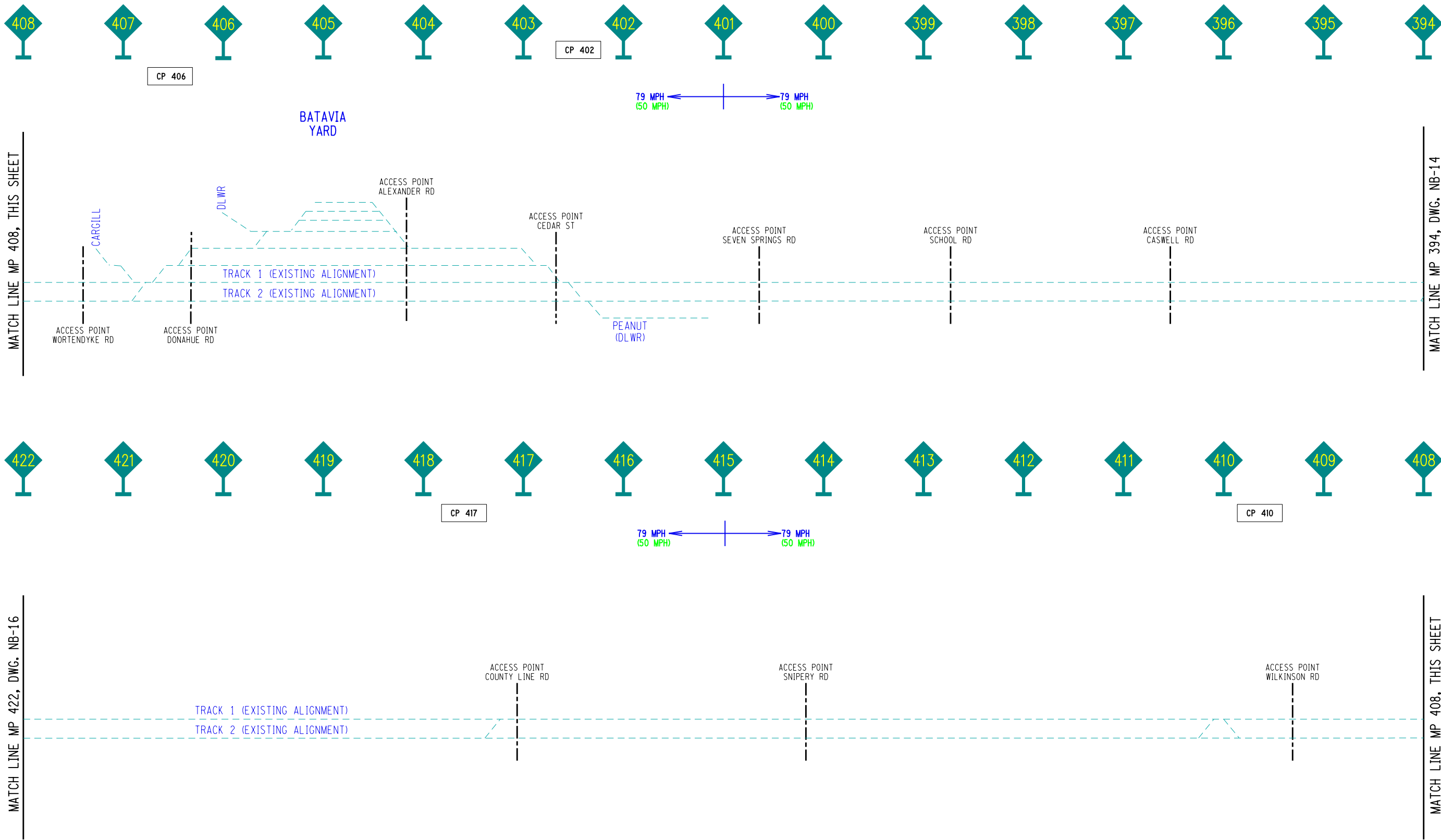
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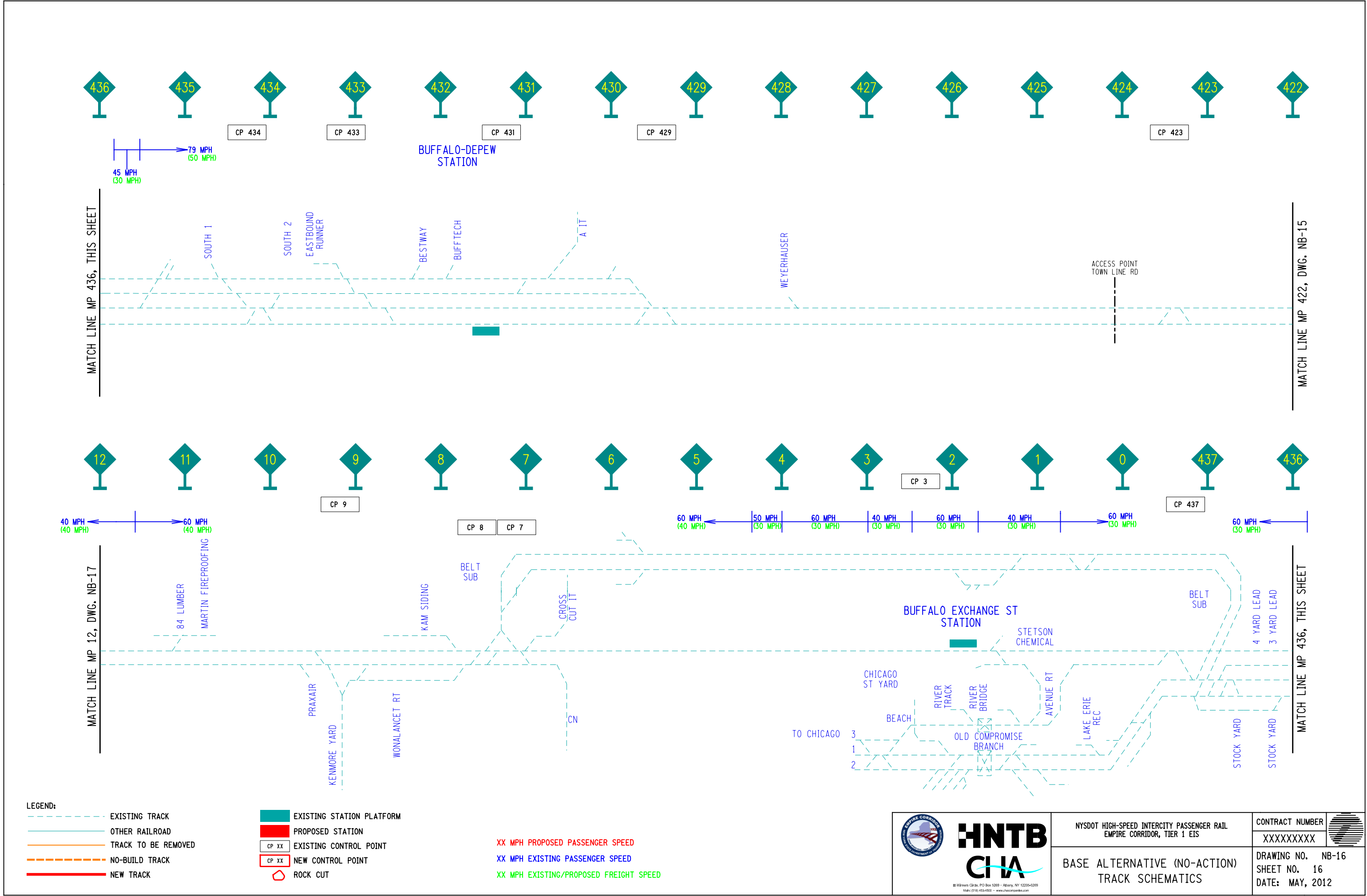


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NYSDOT HIGH-SPEED INTERCITY PASSENGER RAIL
EMPIRE CORRIDOR, TIER 1 EIS
BASE ALTERNATIVE (NO-ACTION)
TRACK SCHEMATICS

CONTRACT NUMBER
XXXXXXXXXX
DRAWING NO. NB-15
SHEET NO. 15
DATE: MAY, 2012

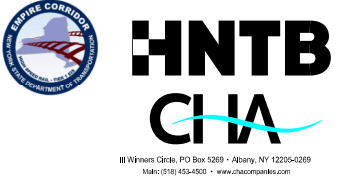













- LEGEND:
- EXISTING TRACK
 - OTHER RAILROAD
 - TRACK TO BE REMOVED
 - NO-BUILD TRACK
 - NEW TRACK

- EXISTING STATION PLATFORM
- PROPOSED STATION
- EXISTING CONTROL POINT
- NEW CONTROL POINT
- ROCK CUT

- XX MPH PROPOSED PASSENGER SPEED
- XX MPH EXISTING PASSENGER SPEED
- XX MPH EXISTING/PROPOSED FREIGHT SPEED

 HNTB CIA <small>© Wilmers Circle, P.O. Box 5269 • Albany, NY 12205-4269 Main: (518) 455-4500 • www.ch2m.com</small>	NYSOT HIGH-SPEED INTERCITY PASSENGER RAIL EMPIRE CORRIDOR, TIER 1 EIS	CONTRACT NUMBER XXXXXXXXXX	
	BASE ALTERNATIVE (NO-ACTION) TRACK SCHEMATICS	DRAWING NO. NB-16 SHEET NO. 16 DATE: MAY, 2012	


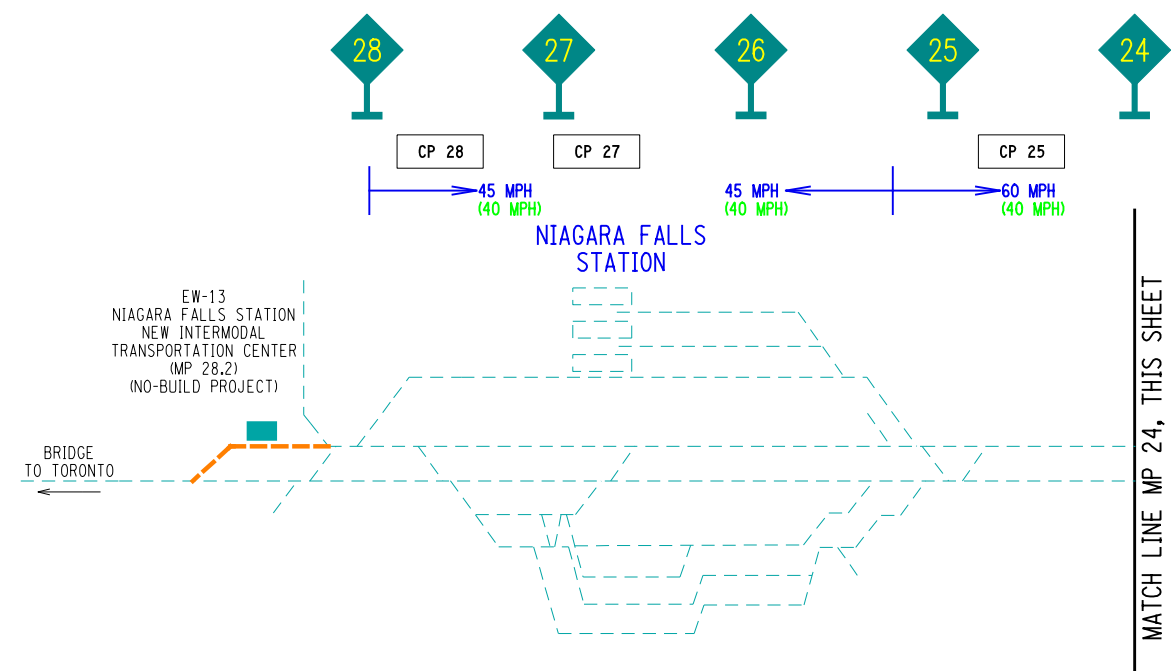
 EXISTING TRACK
 OTHER RAILROAD
 TRACK TO BE REMOVED
 NO-BUILD TRACK
 NEW TRACK

	EXISTING STATION PLATFORM
	PROPOSED STATION
	CP XX EXISTING CONTROL POINT
	CP XX NEW CONTROL POINT
	ROCK CUT

XX MPH PROPOSED PASSENGER SPEED


XX MPH EXISTING PASSENGER SPEED

XX MPH EXISTING/PROPOSED FREIGHT SPEED



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BASE ALTERNATIVE (NO-ACTION)
TRACK SCHEMATICS

CONTRACT NUMBER	
XXXXXXXXXX	

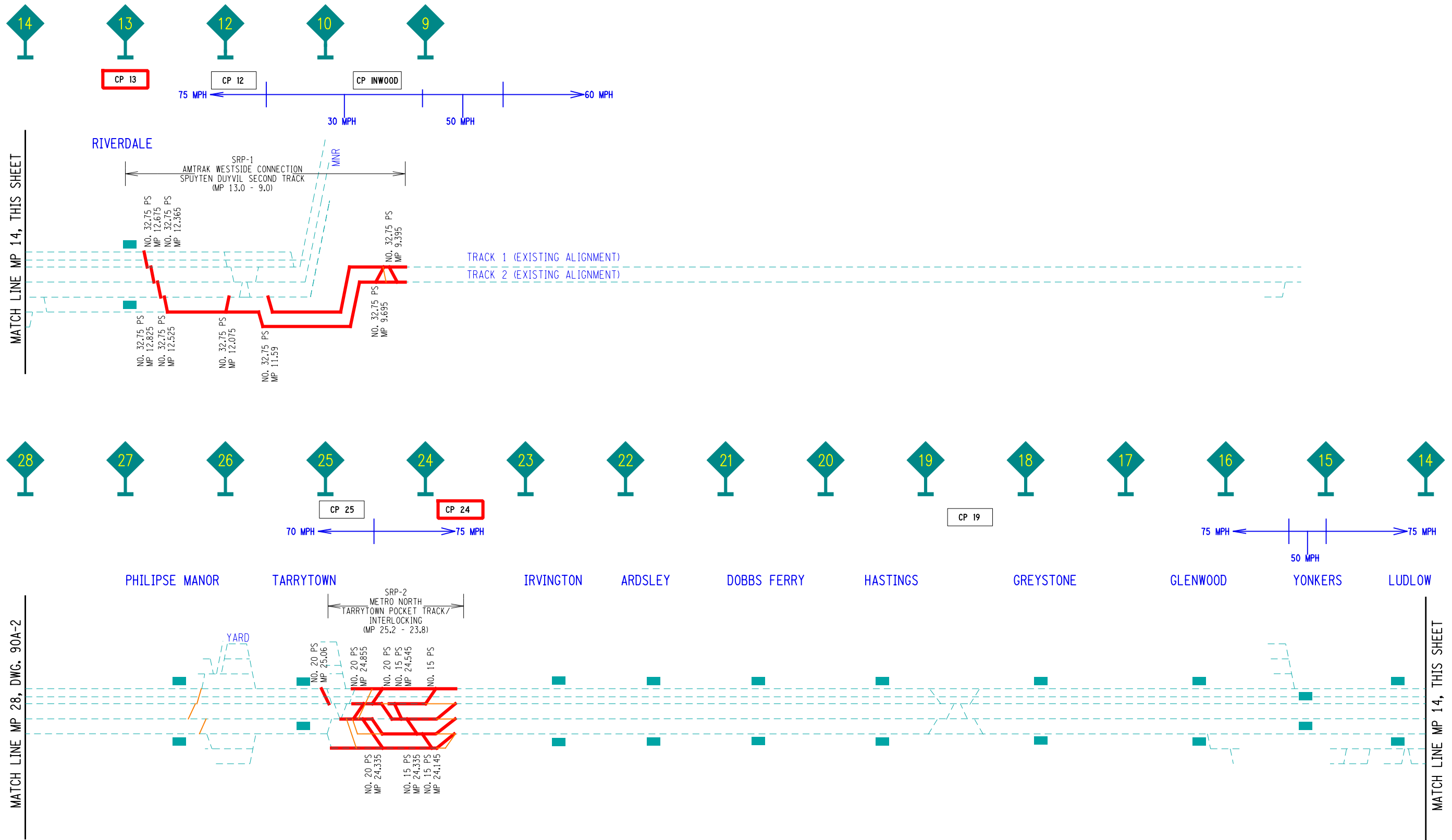
DRAWING NO.	NB-17
SHEET NO.	17
DATE:	MAY, 2012



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Track Schematics for Alternative 90A

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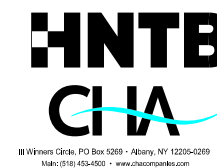
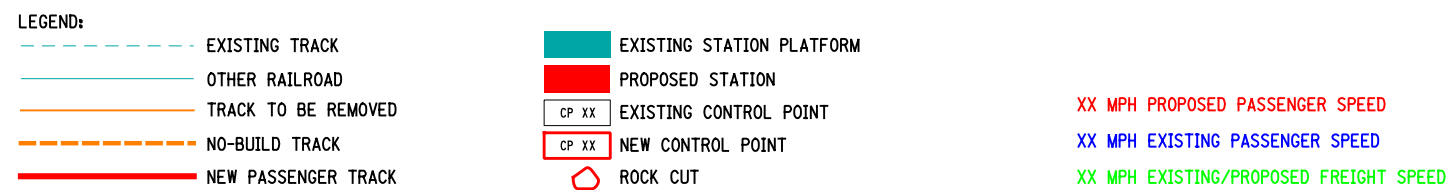
LEGEND:

- EXISTING TRACK
- OTHER RAILROAD
- TRACK TO BE REMOVED
- NO-BUILD TRACK
- NEW PASSENGER TRACK

- EXISTING STATION PLATFORM
- PROPOSED STATION
- CP XX EXISTING CONTROL POINT
- CP XX NEW CONTROL POINT
- ROCK CUT

- XX MPH PROPOSED PASSENGER SPEED
- XX MPH EXISTING PASSENGER SPEED
- XX MPH EXISTING/PROPOSED FREIGHT SPEED

	NYSOT HIGH-SPEED INTERCITY PASSENGER RAIL EMPIRE CORRIDOR, TIER 1 EIS	CONTRACT NUMBER XXXXXXXXXX	
	ALTERNATIVE 90A ENGINEERED TRACK SCHEMATICS	DRAWING NO. 90A-1 SHEET NO. 1 DATE: MAY, 2012	



ALTERNATIVE 90A
ENGINEERED TRACK SCHEMATICS

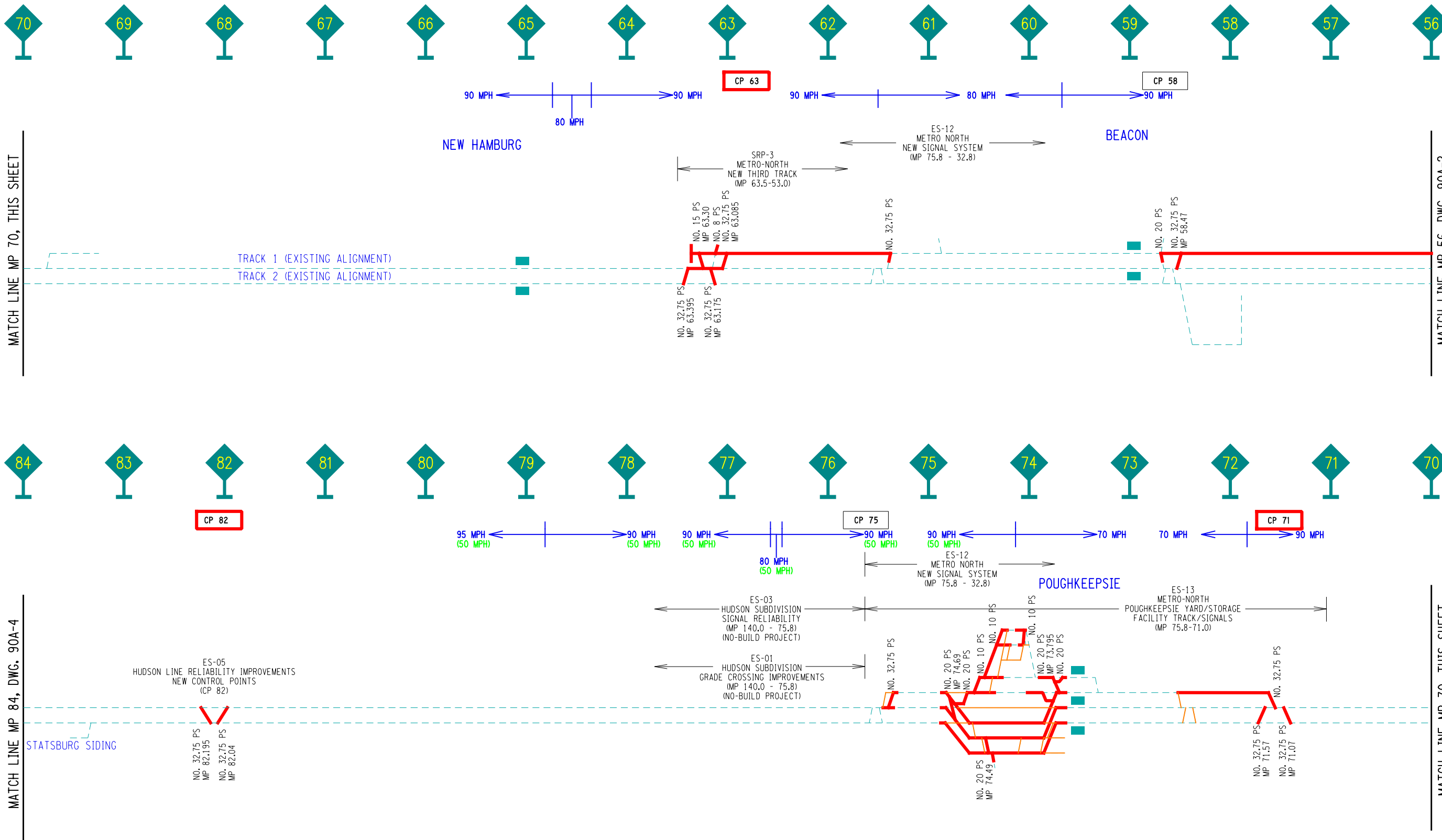
DRAWING NO. 90A-2
SHEET NO. 2
DATE: MAY, 2012

LEGEND:

- EXISTING TRACK
- OTHER RAILROAD
- TRACK TO BE REMOVED
- NO-BUILD TRACK
- NEW PASSENGER TRACK

- EXISTING STATION PLATFORM
- PROPOSED STATION
- EXISTING CONTROL POINT
- NEW CONTROL POINT
- ROCK CUT

- XX MPH PROPOSED PASSENGER SPEED
- XX MPH EXISTING PASSENGER SPEED
- XX MPH EXISTING/PROPOSED FREIGHT SPEED



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	ALTERNATIVE 90A ENGINEERED TRACK SCHEMATICS	DRAWING NO. 90A-3 SHEET NO. 3 DATE: MAY, 2012	

LEGEND:

- EXISTING TRACK
- OTHER RAILROAD
- TRACK TO BE REMOVED
- NO-BUILD TRACK
- NEW PASSENGER TRACK

EXISTING STATION PLATFORM
PROPOSED STATION
CP XX EXISTING CONTROL POINT
CP XX NEW CONTROL POINT
ROCK CUT

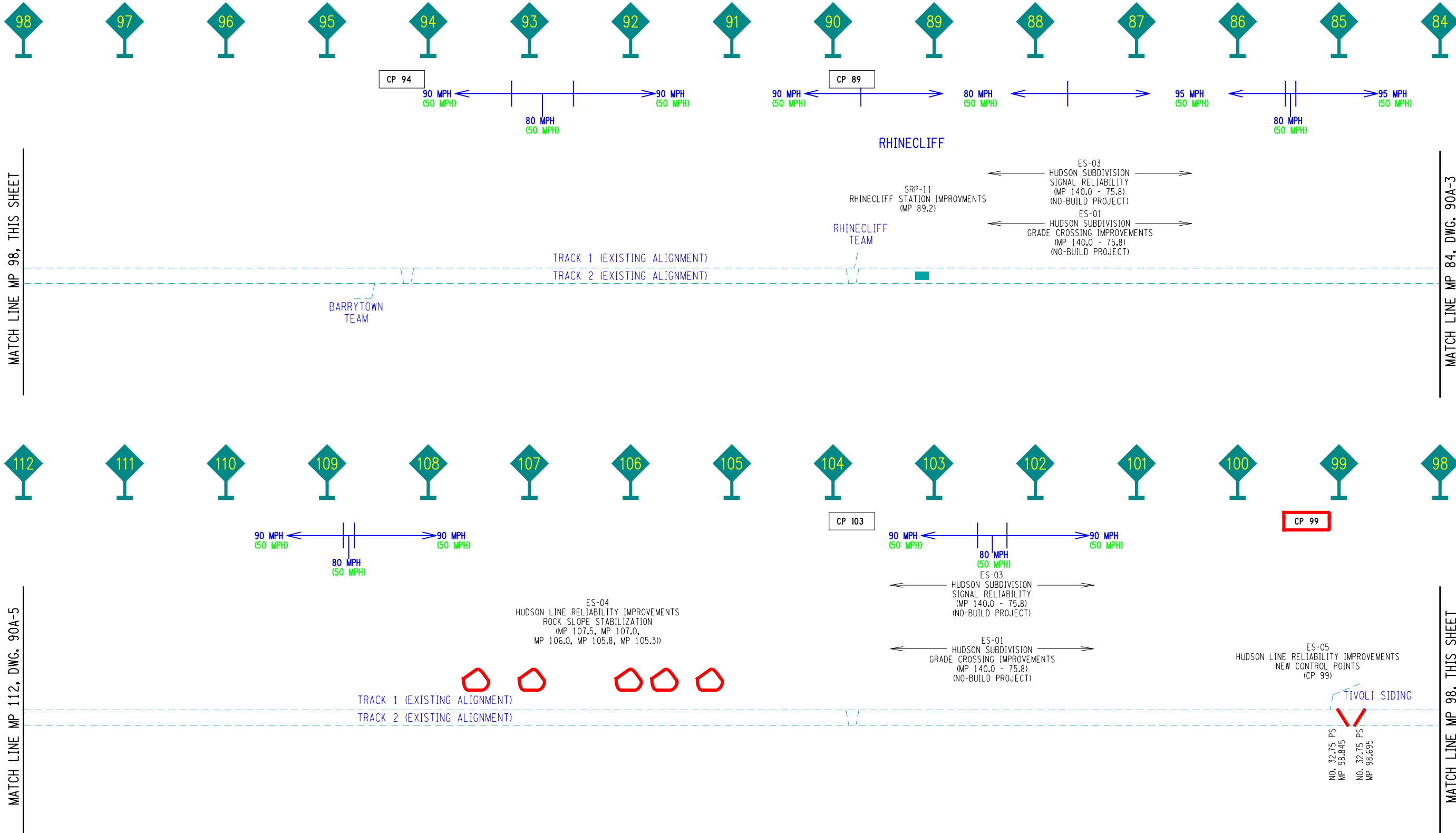
XX MPH PROPOSED PASSENGER SPEED
XX MPH EXISTING PASSENGER SPEED
XX MPH EXISTING/PROPOSED FREIGHT SPEED



HNTB
CIA
111 West 42nd Street, 15th Floor
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NYSOT HIGH-SPEED INTERCITY PASSENGER RAIL
EMPIRE CORRIDOR, TIER 1 EIS
ALTERNATIVE 90A
ENGINEERED TRACK SCHEMATICS

CONTRACT NUMBER
XXXXXXXXXX
DRAWING NO. 90A-4
SHEET NO. 4
DATE: MAY, 2012



LEGEND:

- EXISTING TRACK
- OTHER RAILROAD
- TRACK TO BE REMOVED
- NO-BUILD TRACK
- NEW PASSENGER TRACK

- EXISTING STATION PLATFORM
- PROPOSED STATION
- EXISTING CONTROL POINT
- NEW CONTROL POINT
- ROCK CUT

- XX MPH PROPOSED PASSENGER SPEED
- XX MPH EXISTING PASSENGER SPEED
- XX MPH EXISTING/PROPOSED FREIGHT SPEED



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NYSOT HIGH-SPEED INTERCITY PASSENGER RAIL
EMPIRE CORRIDOR, TIER 1 EIS

ALTERNATIVE 90A
ENGINEERED TRACK SCHEMATICS

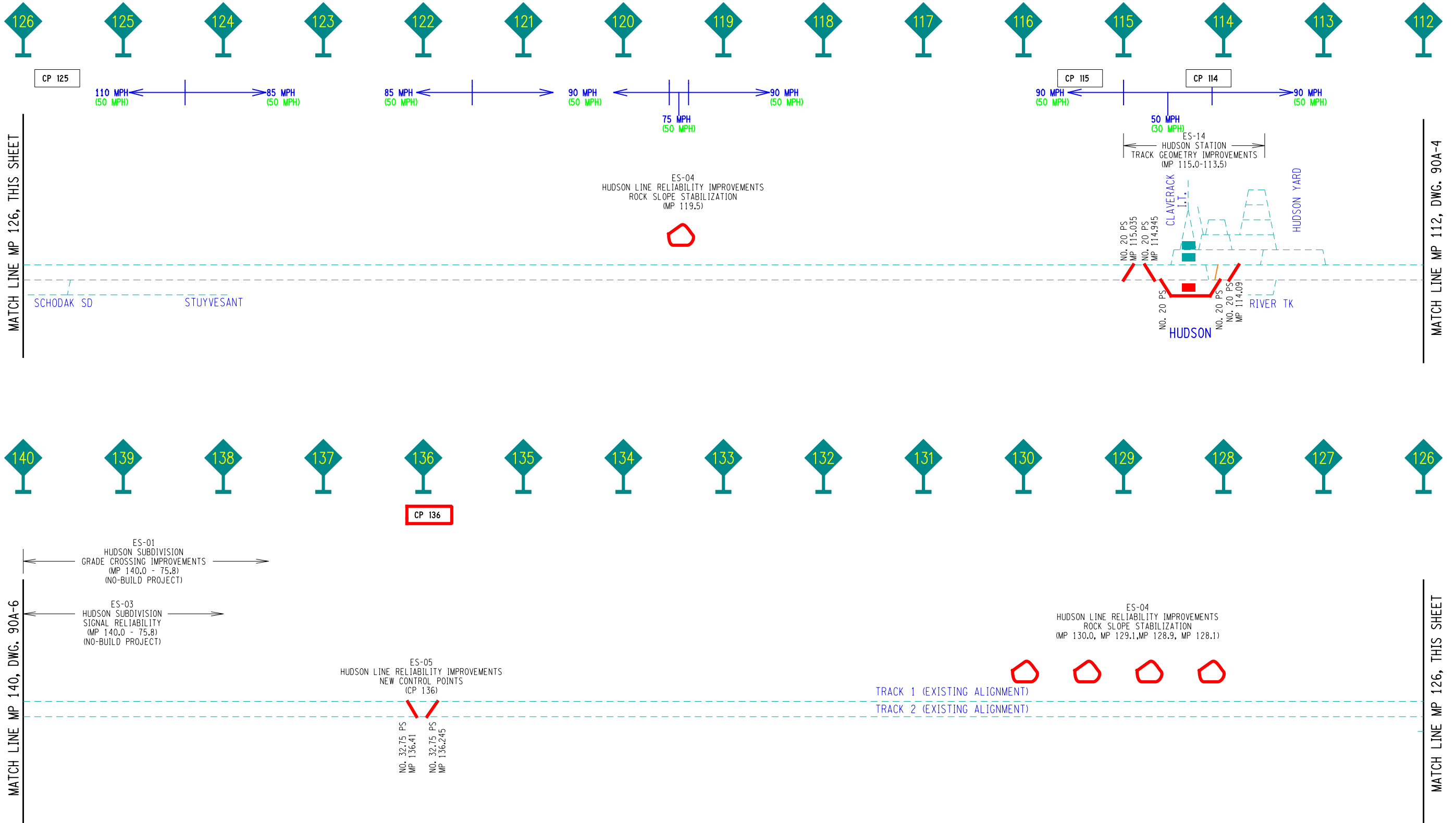
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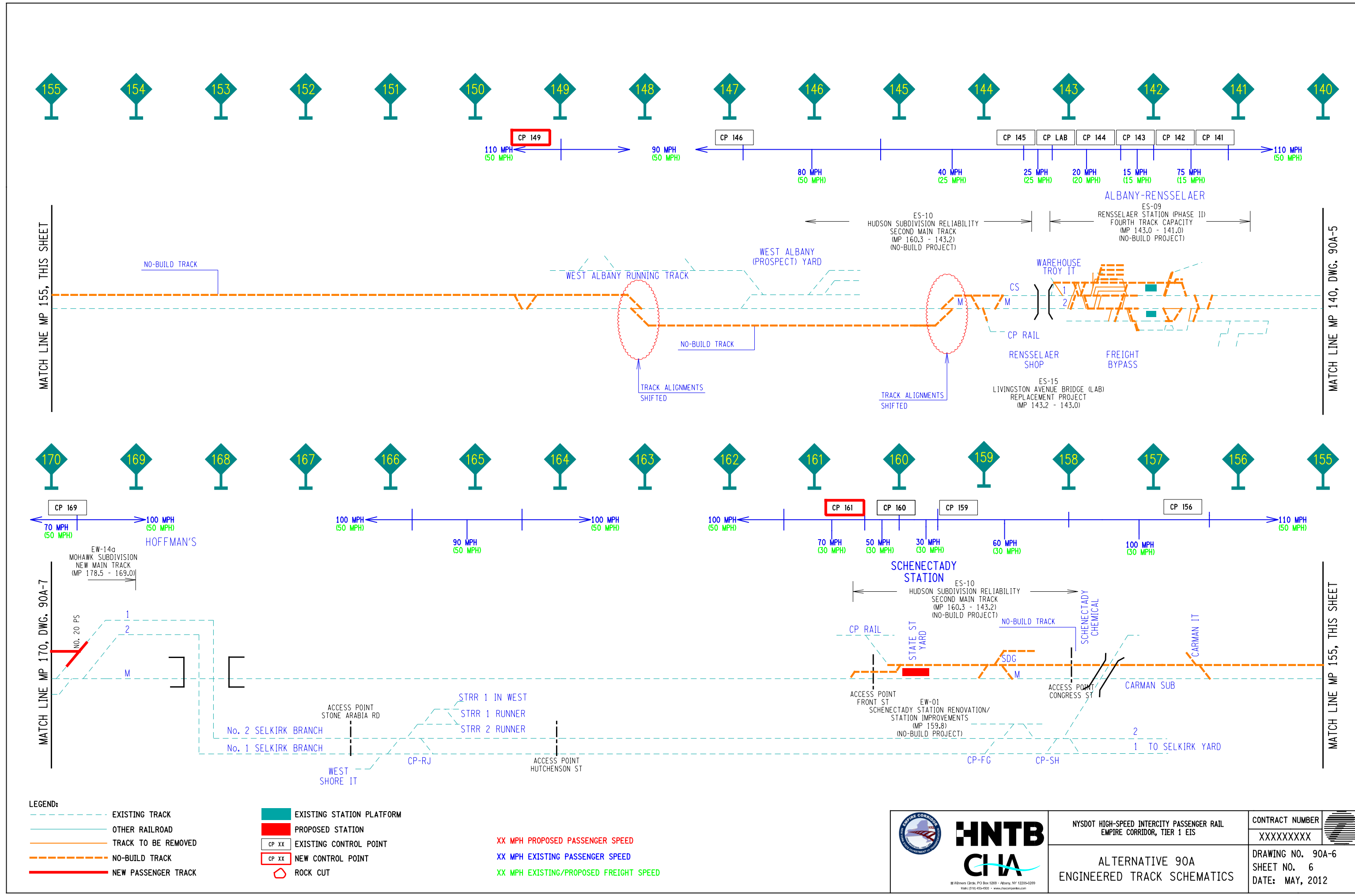
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DRAWING NO. 90A-5

SHEET NO. 5

DATE: MAY, 2012





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	ALTERNATIVE 90A ENGINEERED TRACK SCHEMATICS	DRAWING NO. 90A-6 SHEET NO. 6 DATE: MAY, 2012

LEGEND:

- EXISTING TRACK
- OTHER RAILROAD
- TRACK TO BE REMOVED
- NO-BUILD TRACK
- NEW PASSENGER TRACK

EXISTING STATION PLATFORM

CP XX EXISTING CONTROL POINT

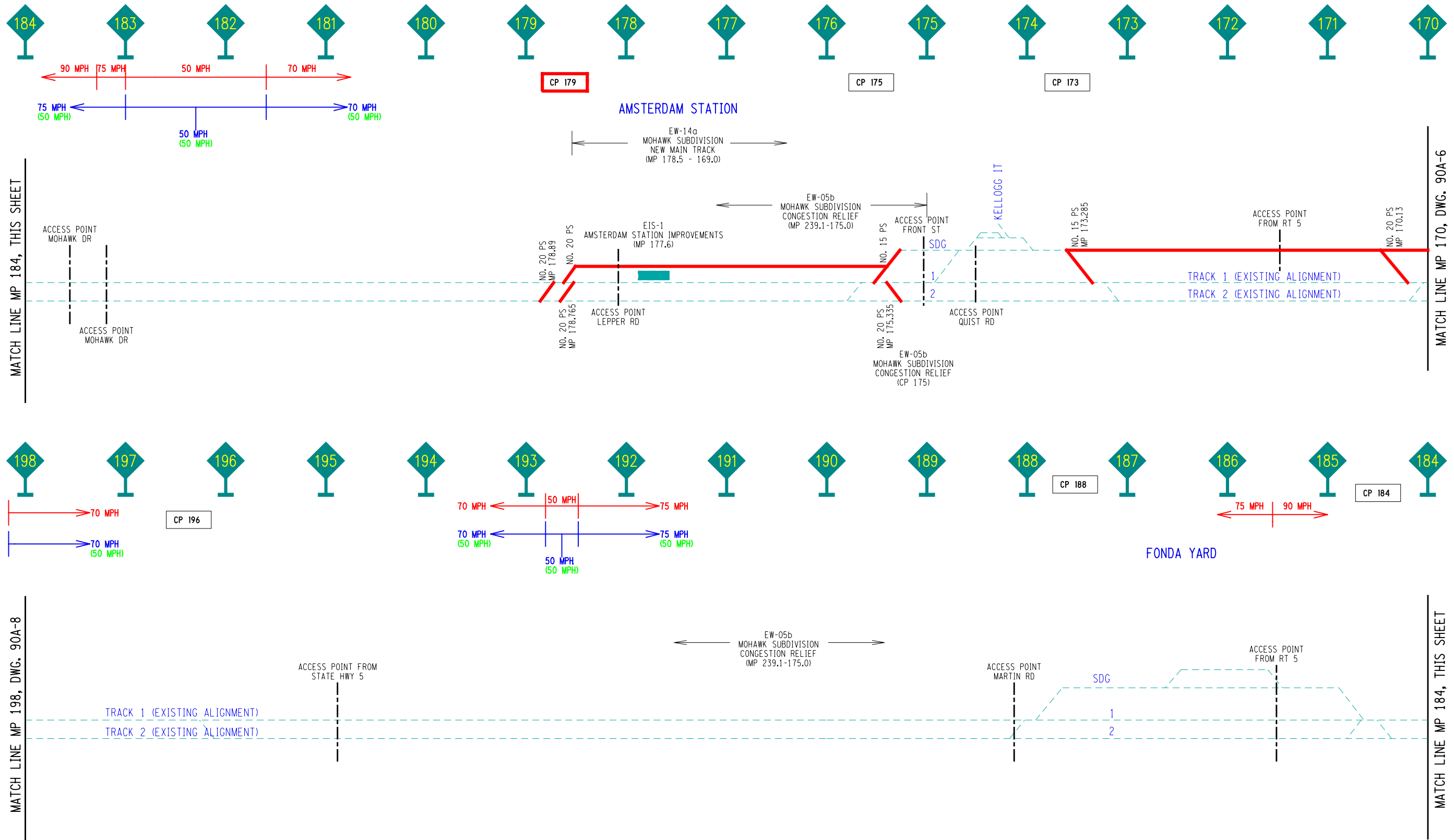
CP XX NEW CONTROL POINT

ROCK CUT

XX MPH PROPOSED PASSENGER SPEED

XX MPH EXISTING PASSENGER SPEED

XX MPH EXISTING/PROPOSED FREIGHT SPEED



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EMPIRE CORRIDOR, TIER 1 EIS

ALTERNATIVE 90A
ENGINEERED TRACK SCHEMATICS

CONTRACT NUMBER
XXXXXXXXXX

DRAWING NO. 90A-7
SHEET NO. 7
DATE: MAY, 2012

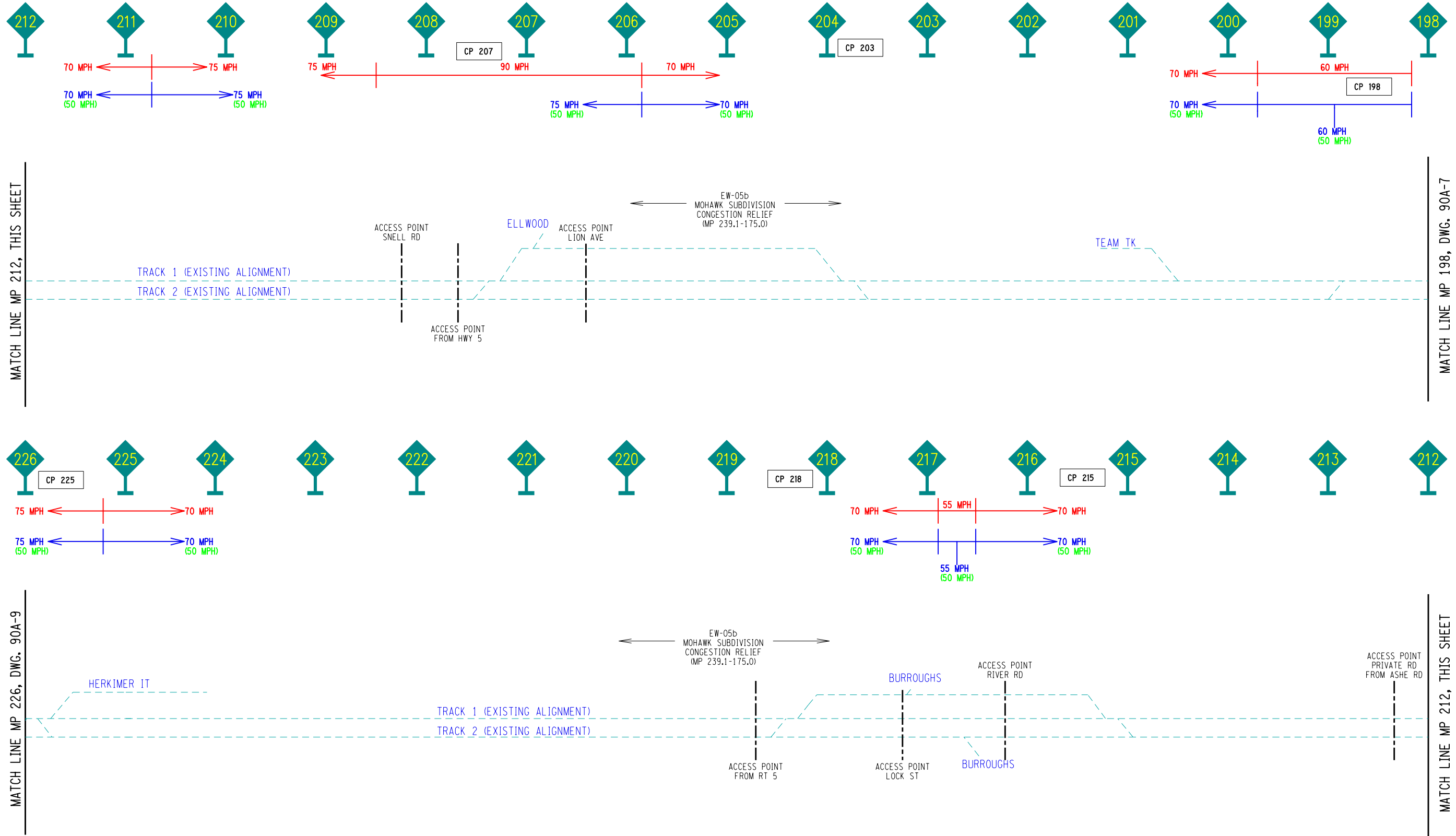




LEGEND:

- EXISTING TRACK
- OTHER RAILROAD
- TRACK TO BE REMOVED
- NO-BUILD TRACK
- NEW PASSENGER TRACK

- EXISTING STATION PLATFORM
- PROPOSED STATION
- CP XX EXISTING CONTROL POINT
- CP XX NEW CONTROL POINT
- ROCK CUT

- XX MPH PROPOSED PASSENGER SPEED
- XX MPH EXISTING PASSENGER SPEED
- XX MPH EXISTING/PROPOSED FREIGHT SPEED

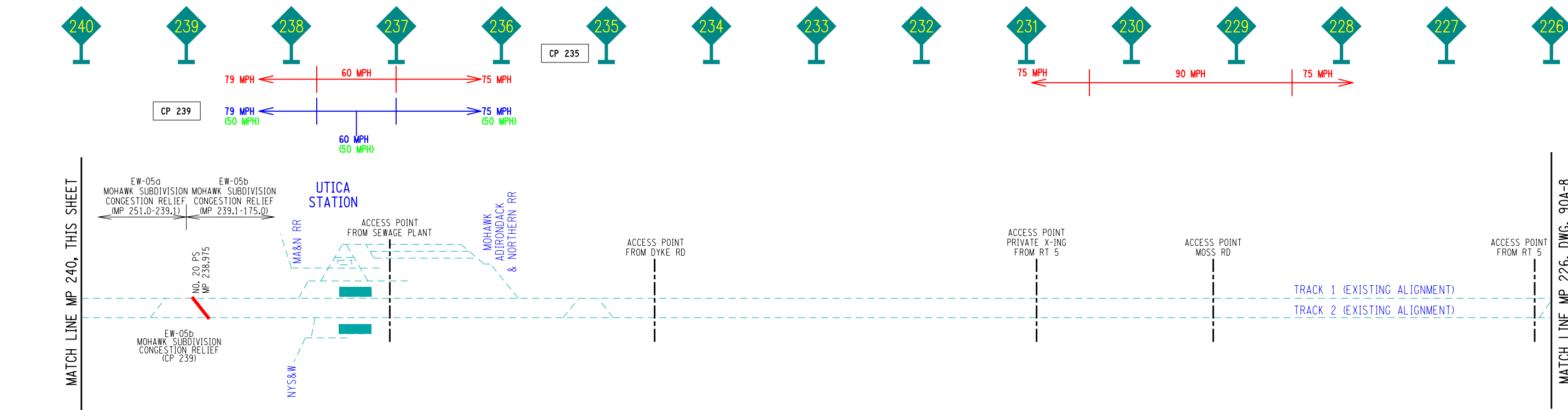
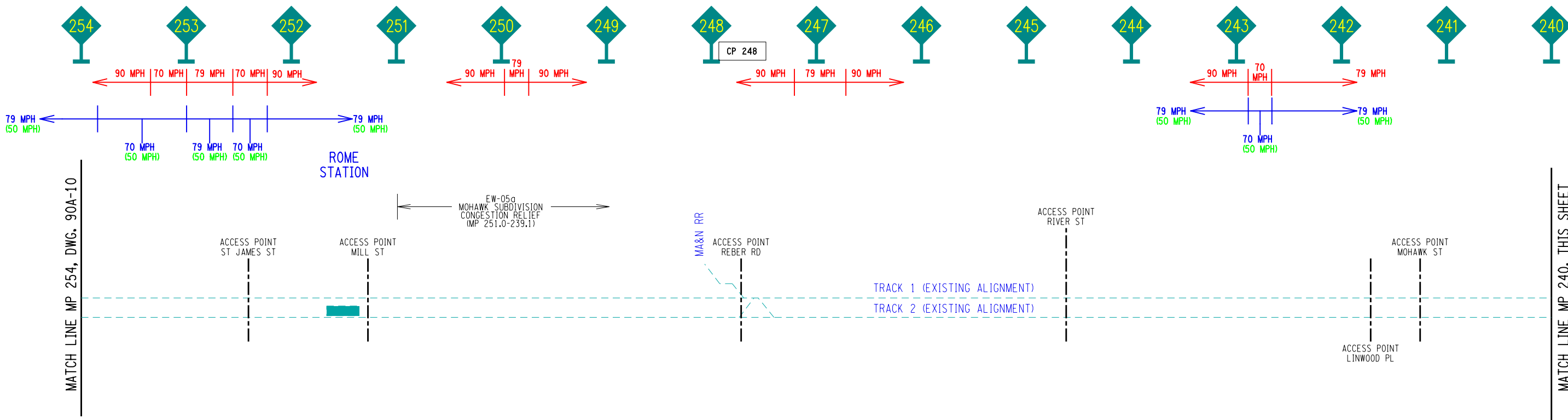


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	ALTERNATIVE 90A ENGINEERED TRACK SCHEMATICS	DRAWING NO. 90A-8 SHEET NO. 8 DATE: MAY, 2012	

- LEGEND:
- EXISTING TRACK
 - OTHER RAILROAD
 - TRACK TO BE REMOVED
 - NO-BUILD TRACK
 - NEW PASSENGER TRACK

- EXISTING STATION PLATFORM
- PROPOSED STATION
- EXISTING CONTROL POINT
- NEW CONTROL POINT
- ROCK CUT

- XX MPH PROPOSED PASSENGER SPEED
- XX MPH EXISTING PASSENGER SPEED
- XX MPH EXISTING/PROPOSED FREIGHT SPEED



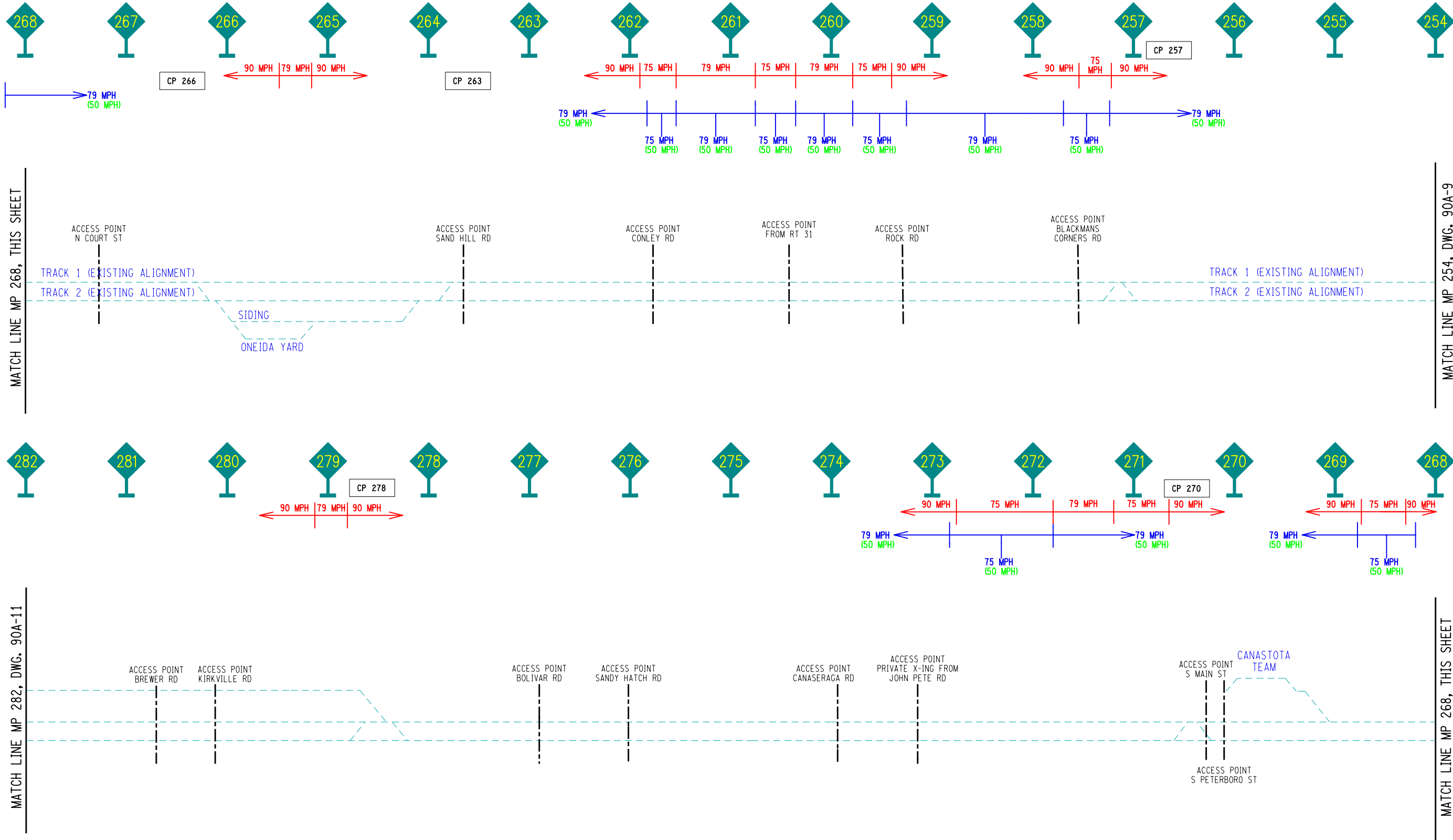
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	ALTERNATIVE 90A ENGINEERED TRACK SCHEMATICS	DRAWING NO. 90A-9 SHEET NO. 9 DATE: MAY, 2012	

LEGEND:

- EXISTING TRACK
- OTHER RAILROAD
- TRACK TO BE REMOVED
- NO-BUILD TRACK
- NEW PASSENGER TRACK

- EXISTING STATION PLATFORM
- PROPOSED STATION
- EXISTING CONTROL POINT
- NEW CONTROL POINT
- ROCK CUT

- XX MPH PROPOSED PASSENGER SPEED
- XX MPH EXISTING PASSENGER SPEED
- XX MPH EXISTING/PROPOSED FREIGHT SPEED





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	ALTERNATIVE 90A ENGINEERED TRACK SCHEMATICS	DRAWING NO. 90A-10 SHEET NO. 10 DATE: MAY, 2012	

LEGEND:

- EXISTING TRACK
- OTHER RAILROAD
- TRACK TO BE REMOVED
- NO-BUILD TRACK
- NEW PASSENGER TRACK

- EXISTING STATION PLATFORM
- PROPOSED STATION
- EXISTING CONTROL POINT
- NEW CONTROL POINT
- ROCK CUT

- XX MPH PROPOSED PASSENGER SPEED
- XX MPH EXISTING PASSENGER SPEED
- XX MPH EXISTING/PROPOSED FREIGHT SPEED



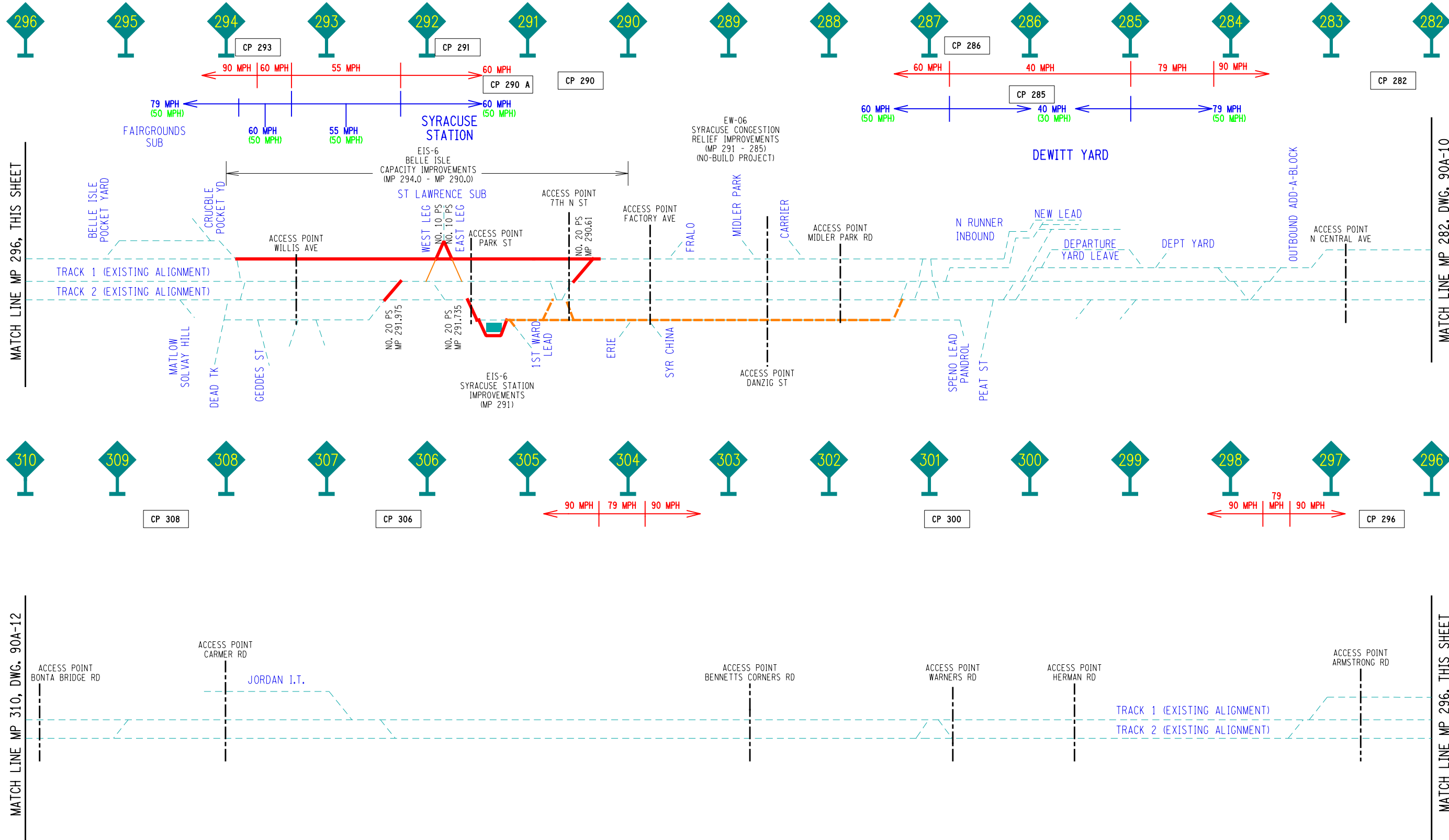
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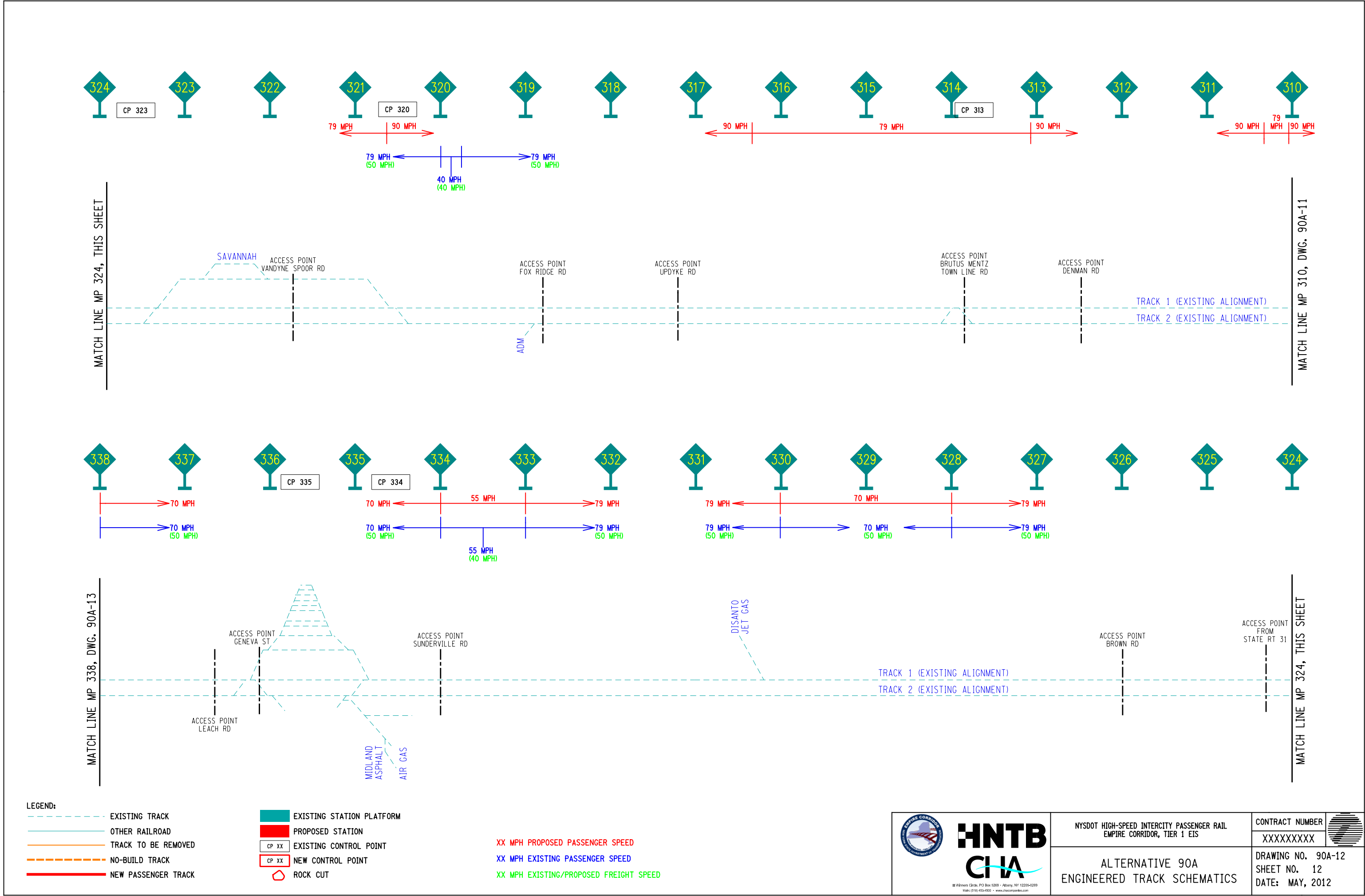
NYSDOT HIGH-SPEED INTERCITY PASSENGER RAIL
EMPIRE CORRIDOR, TIER 1 EIS

ALTERNATIVE 90A
ENGINEERED TRACK SCHEMATICS

CONTRACT NUMBER
XXXXXXXXXX

DRAWING NO. 90A-11
SHEET NO. 11
DATE: MAY, 2012





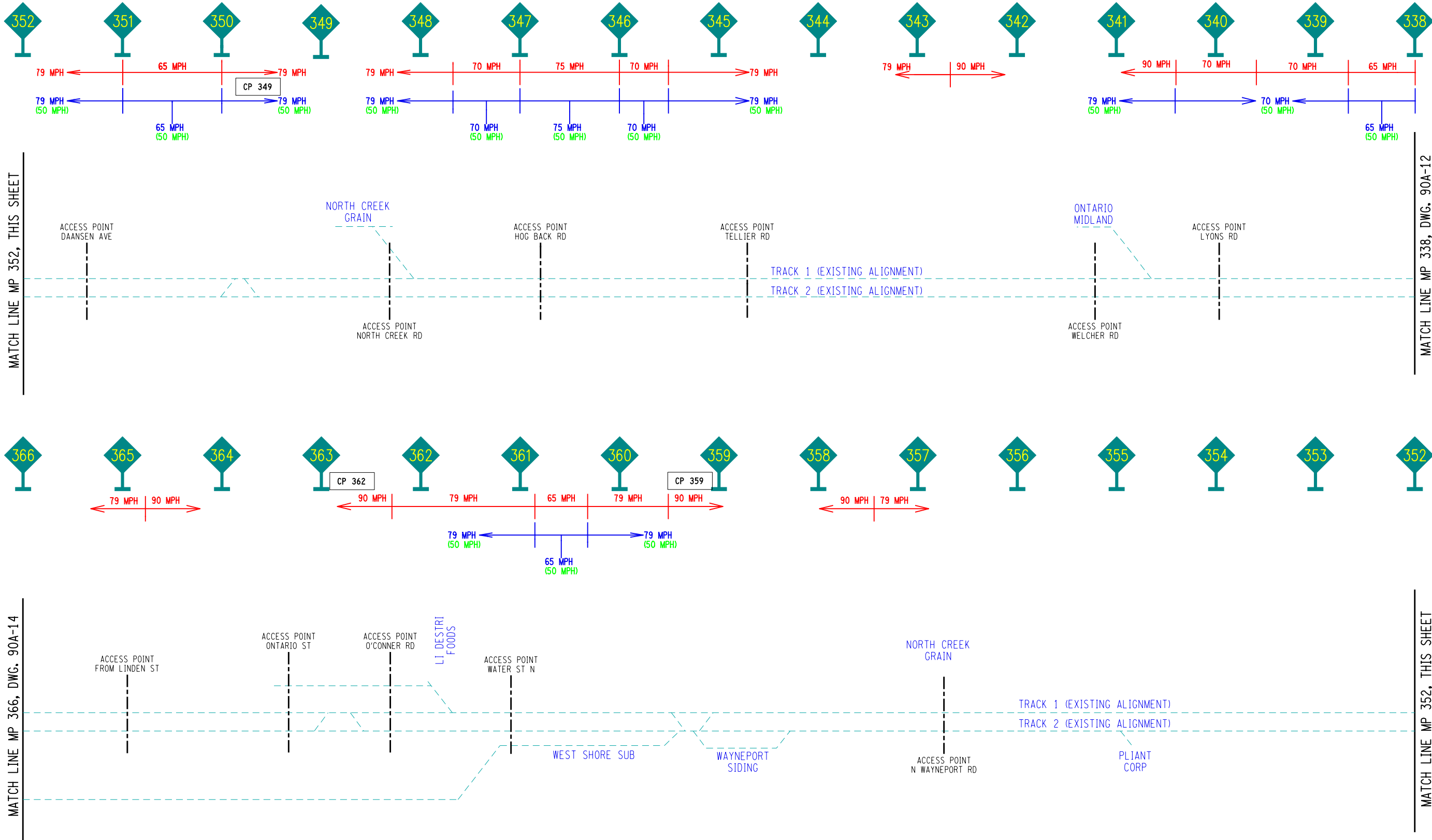
 HNTB CIA 110 Wilbur Circle, P.O. Box 5269 • Albany, NY 12205-0269 Phone: (518) 455-4500 • www.hntb.com/cia	NYSOT HIGH-SPEED INTERCITY PASSENGER RAIL EMPIRE CORRIDOR, TIER 1 EIS	CONTRACT NUMBER XXXXXXXXXX	
	ALTERNATIVE 90A ENGINEERED TRACK SCHEMATICS	DRAWING NO. 90A-12 SHEET NO. 12 DATE: MAY, 2012	

LEGEND:

- EXISTING TRACK
- OTHER RAILROAD
- TRACK TO BE REMOVED
- NO-BUILD TRACK
- NEW PASSENGER TRACK

- EXISTING STATION PLATFORM
- PROPOSED STATION
- EXISTING CONTROL POINT
- NEW CONTROL POINT
- ROCK CUT

- XX MPH PROPOSED PASSENGER SPEED
- XX MPH EXISTING PASSENGER SPEED
- XX MPH EXISTING/PROPOSED FREIGHT SPEED



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NYSDOT HIGH-SPEED INTERCITY PASSENGER RAIL
EMPIRE CORRIDOR, TIER 1 EIS

ALTERNATIVE 90A
ENGINEERED TRACK SCHEMATICS

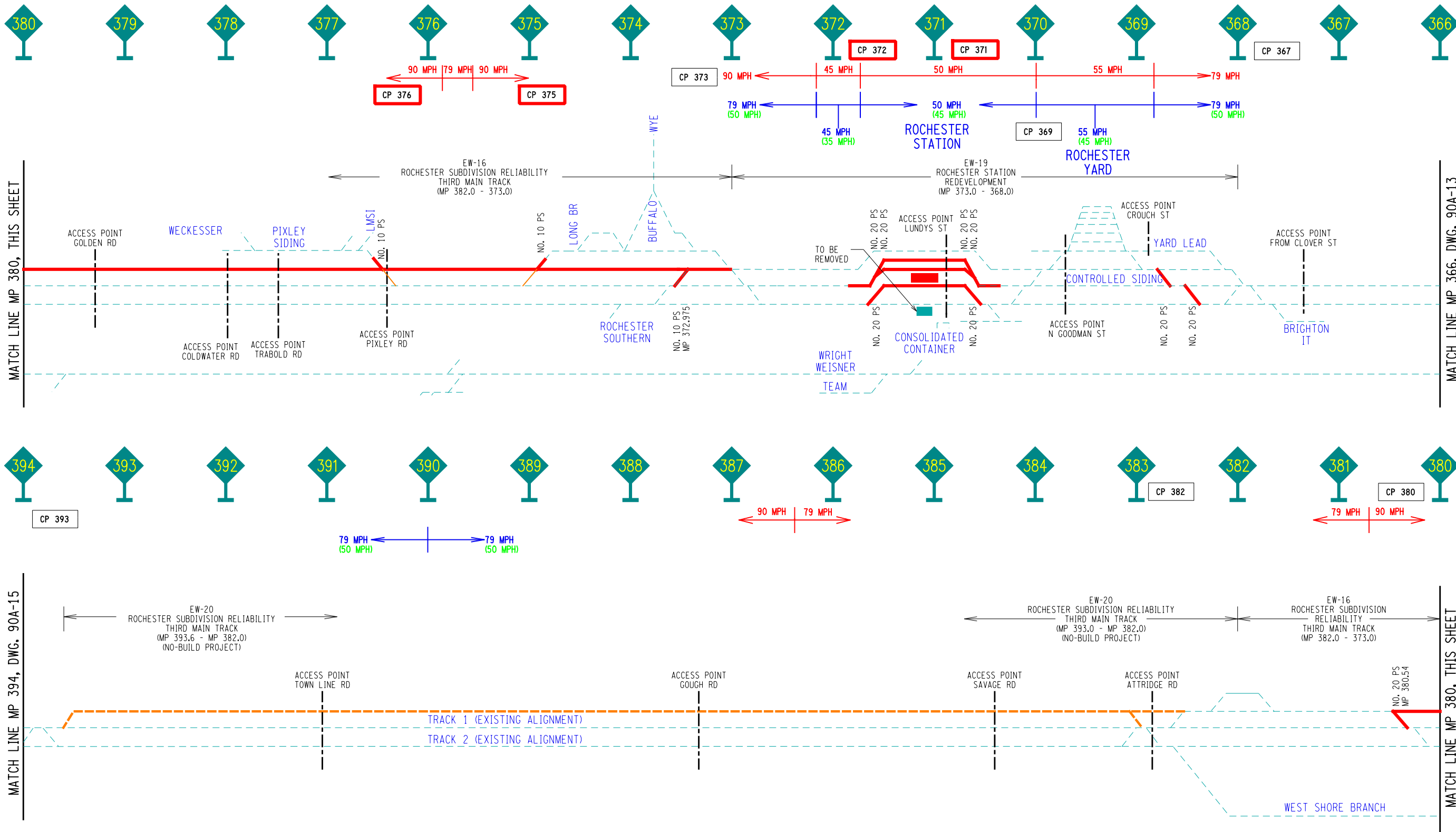
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DRAWING NO. 90A-13

SHEET NO. 13

DATE: MAY, 2012



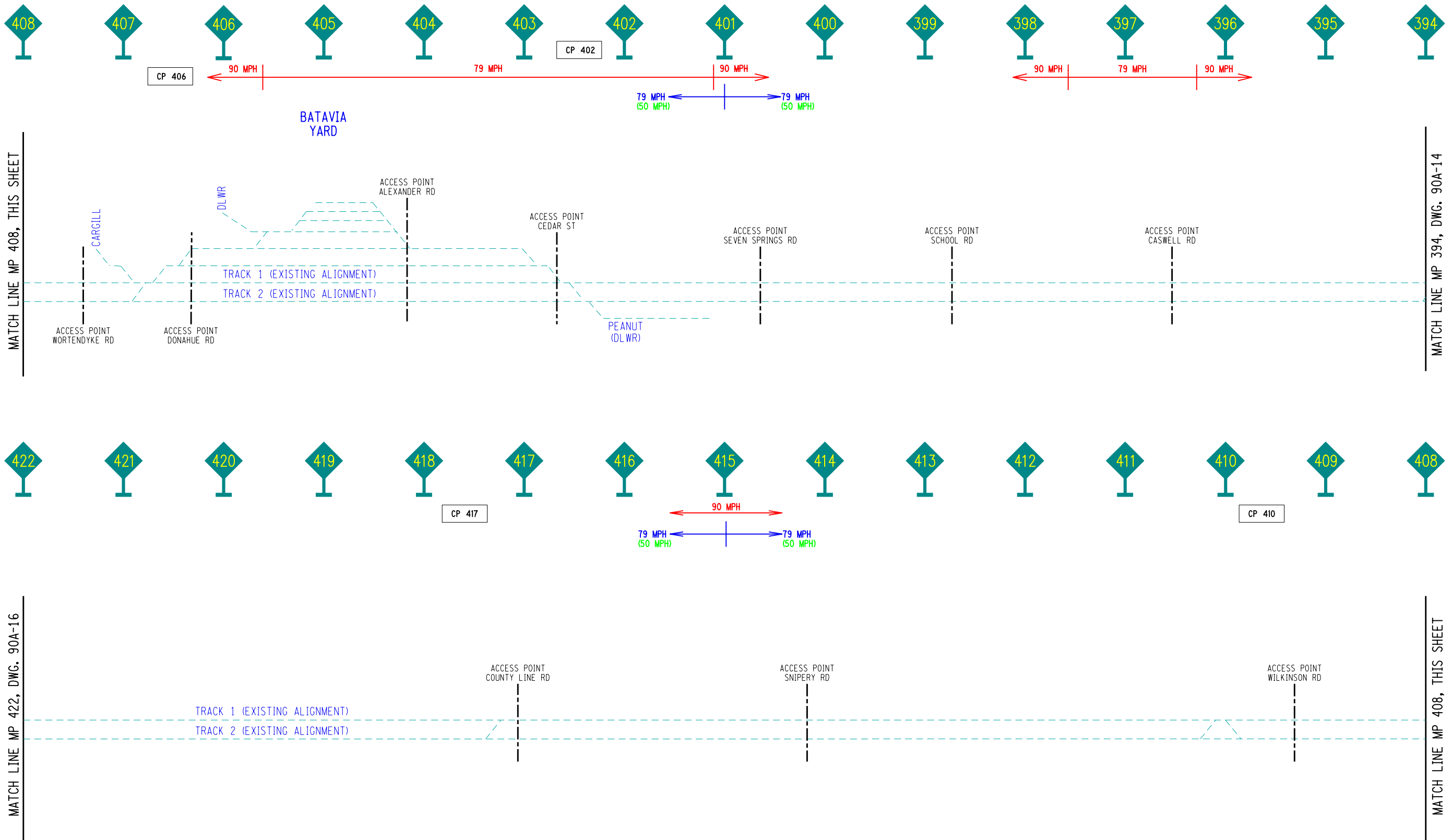
LEGEND:

- EXISTING TRACK
- OTHER RAILROAD
- TRACK TO BE REMOVED
- NO-BUILD TRACK
- NEW PASSENGER TRACK

- EXISTING STATION PLATFORM
- PROPOSED STATION
- EXISTING CONTROL POINT
- NEW CONTROL POINT
- ROCK CUT

- XX MPH PROPOSED PASSENGER SPEED
- XX MPH EXISTING PASSENGER SPEED
- XX MPH EXISTING/PROPOSED FREIGHT SPEED

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	ALTERNATIVE 90A ENGINEERED TRACK SCHEMATICS	DRAWING NO. 90A-14 SHEET NO. 14 DATE: MAY, 2012



LEGEND:

- EXISTING TRACK
- OTHER RAILROAD
- TRACK TO BE REMOVED
- NO-BUILD TRACK
- NEW PASSENGER TRACK

- EXISTING STATION PLATFORM
- PROPOSED STATION
- EXISTING CONTROL POINT
- NEW CONTROL POINT
- ROCK CUT

- XX MPH PROPOSED PASSENGER SPEED
- XX MPH EXISTING PASSENGER SPEED
- XX MPH EXISTING/PROPOSED FREIGHT SPEED



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NYSDOT HIGH-SPEED INTERCITY PASSENGER RAIL
EMPIRE CORRIDOR, TIER 1 EIS

ALTERNATIVE 90A
ENGINEERED TRACK SCHEMATICS

CONTRACT NUMBER

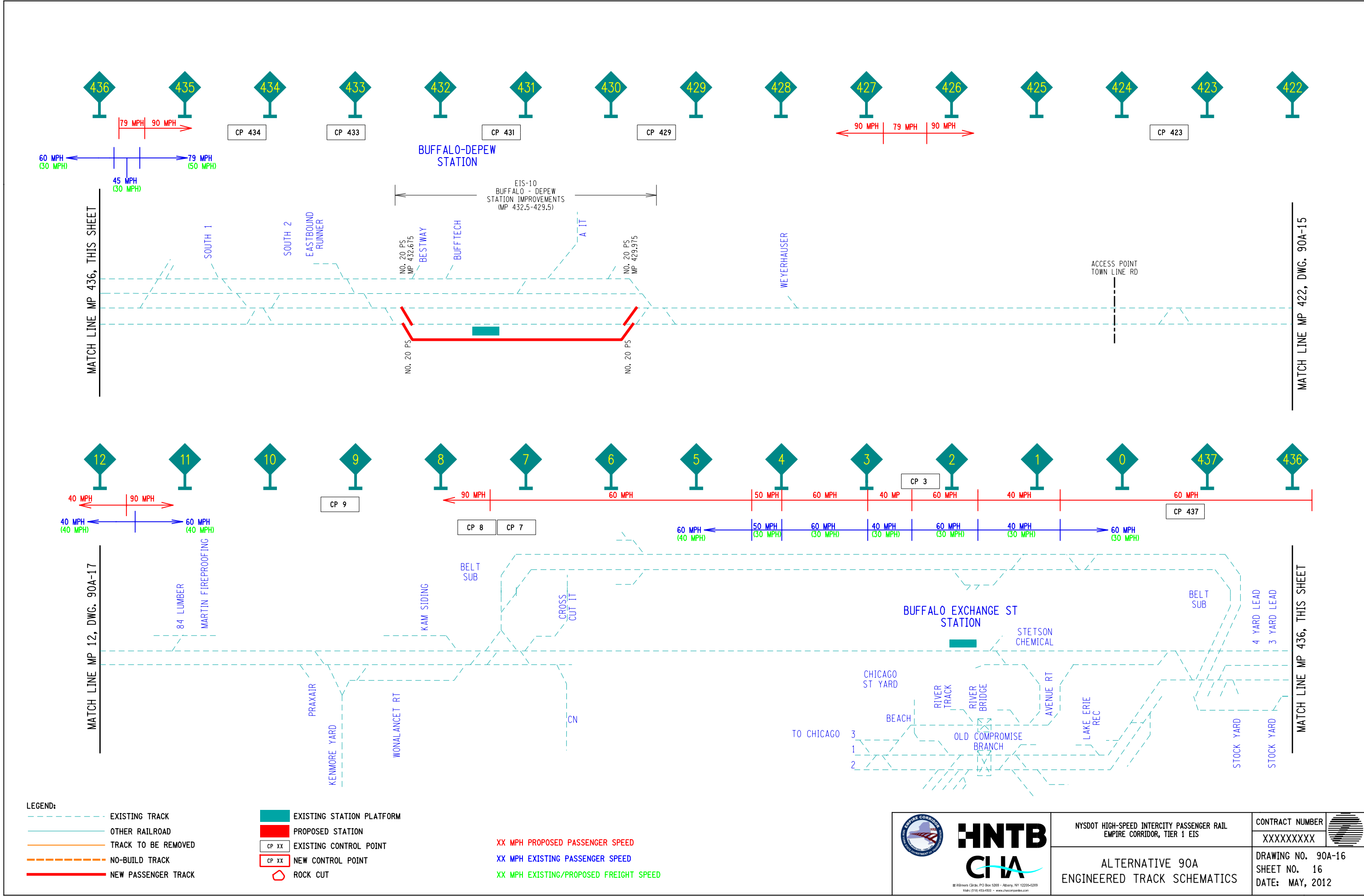
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DRAWING NO. 90A-15

SHEET NO. 15

DATE: MAY, 2012



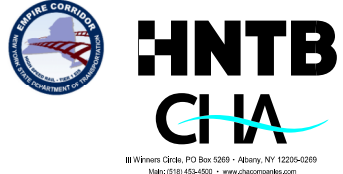



LEGEND:

- EXISTING TRACK
- OTHER RAILROAD
- TRACK TO BE REMOVED
- NO-BUILD TRACK
- NEW PASSENGER TRACK

- EXISTING STATION PLATFORM
- PROPOSED STATION
- EXISTING CONTROL POINT
- NEW CONTROL POINT
- ROCK CUT

- XX MPH PROPOSED PASSENGER SPEED
- XX MPH EXISTING PASSENGER SPEED
- XX MPH EXISTING/PROPOSED FREIGHT SPEED

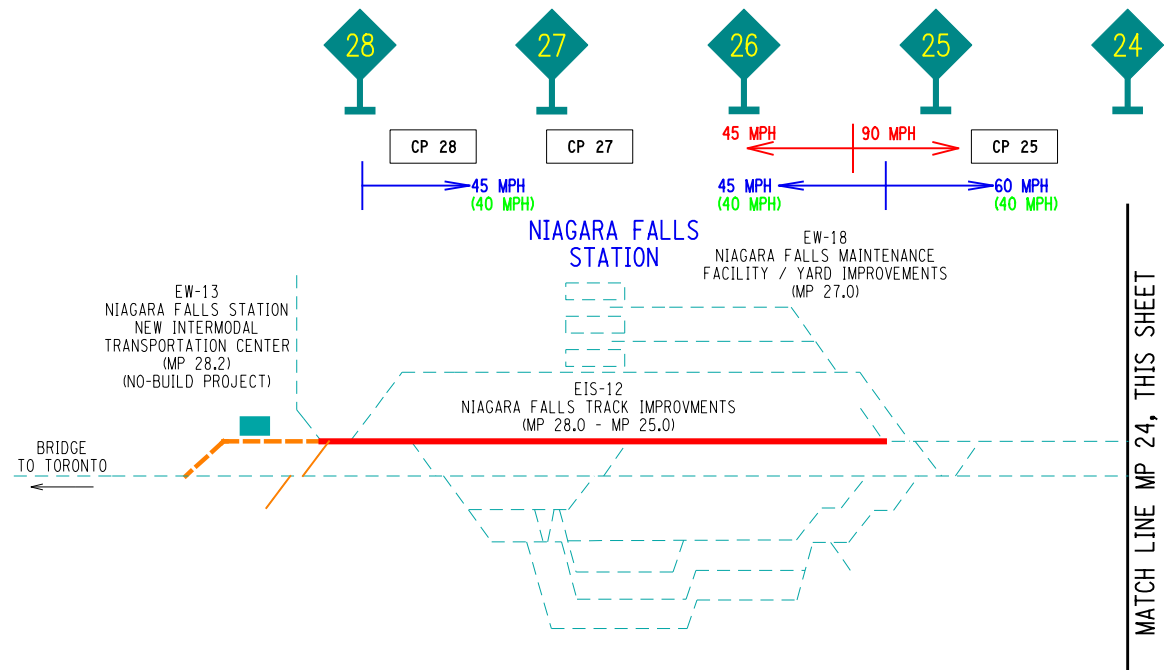
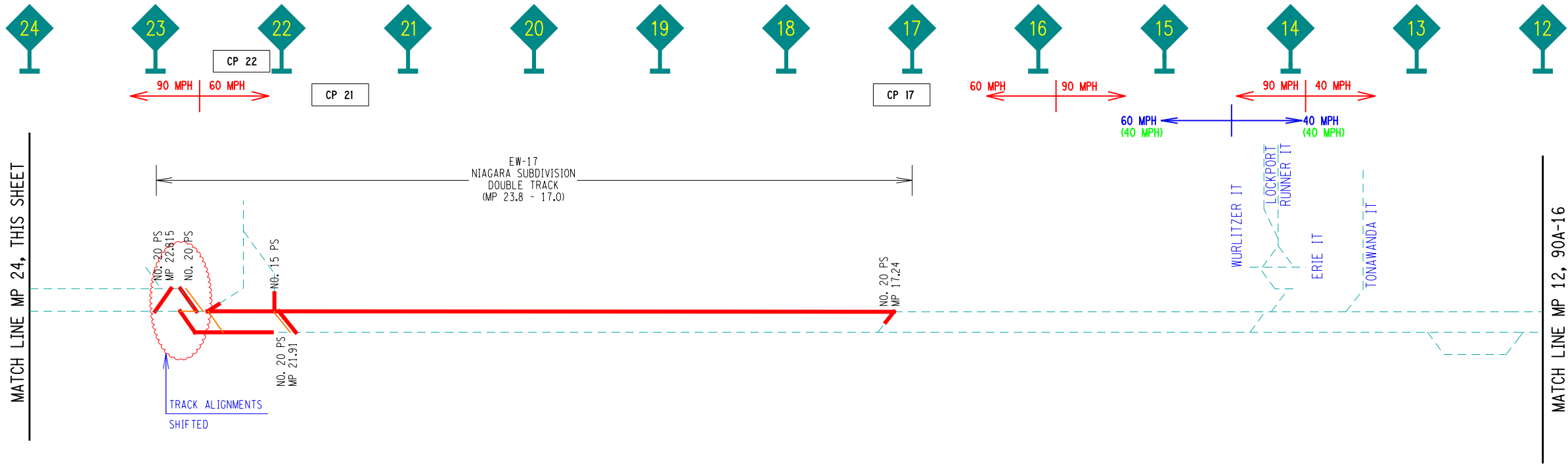
 HNTB CIA 111 Wilmsers Circle, P.O. Box 5269 • Albany, NY 12205-4269 Main: (518) 455-4500 • www.ch2m.com	NYSOT HIGH-SPEED INTERCITY PASSENGER RAIL EMPIRE CORRIDOR, TIER 1 EIS	CONTRACT NUMBER XXXXXXXXXX	
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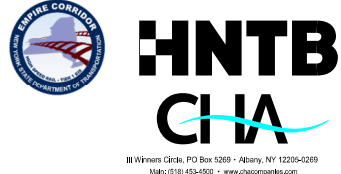

LEGEND:

- EXISTING TRACK
- OTHER RAILROAD
- TRACK TO BE REMOVED
- NO-BUILD TRACK
- NEW PASSENGER TRACK

EXISTING STATION PLATFORM
PROPOSED STATION
CP XX EXISTING CONTROL POINT
CP XX NEW CONTROL POINT
ROCK CUT

XX MPH PROPOSED PASSENGER SPEED
XX MPH EXISTING PASSENGER SPEED
XX MPH EXISTING/PROPOSED FREIGHT SPEED



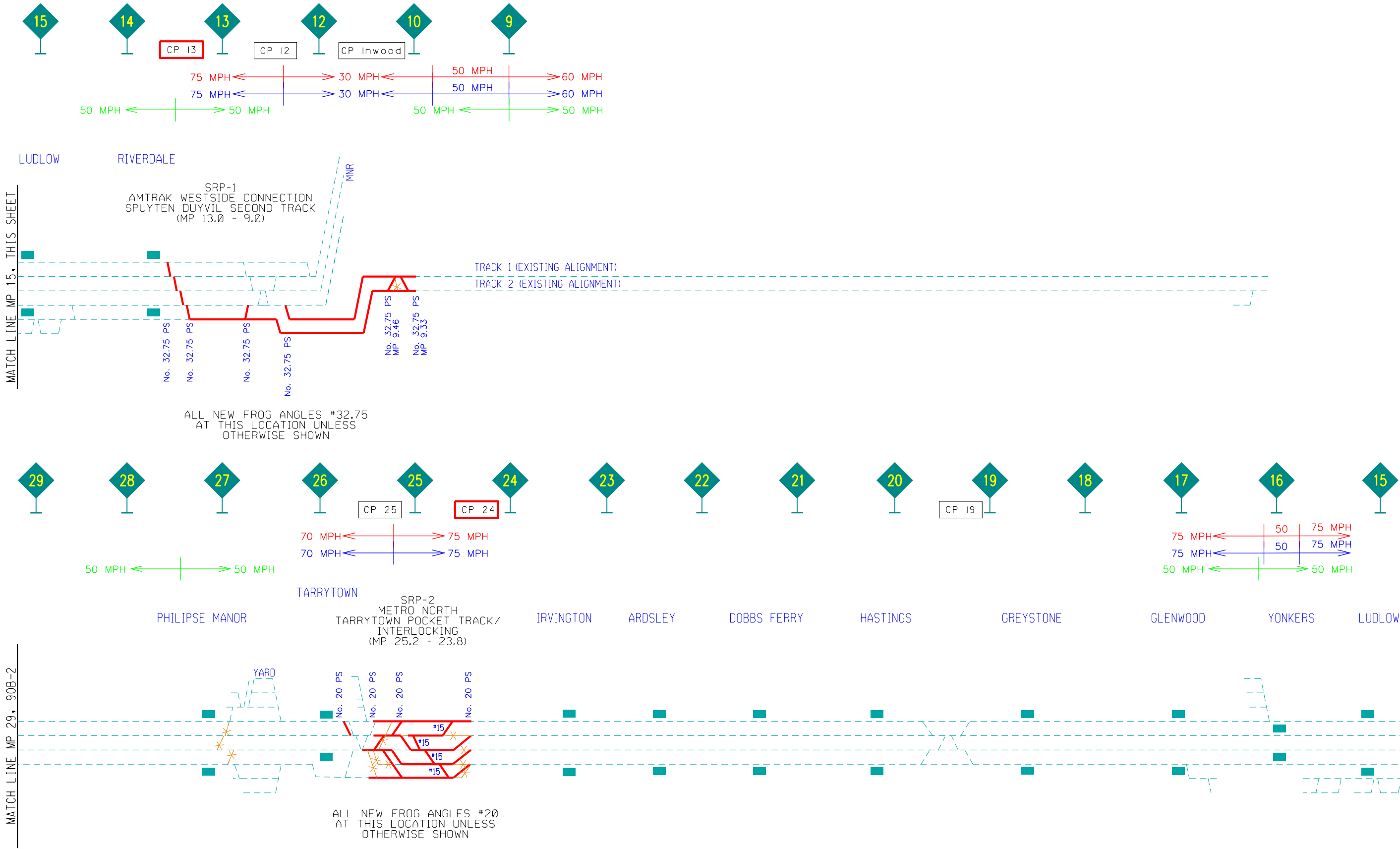
 HNTB CIA	NYSDOT HIGH-SPEED INTERCITY PASSENGER RAIL EMPIRE CORRIDOR, TIER 1 EIS	CONTRACT NUMBER XXXXXXXXXX	
	ALTERNATIVE 90A ENGINEERED TRACK SCHEMATICS	DRAWING NO. 90A-17 SHEET NO. 17 DATE: MAY, 2012	

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Track Schematics for Alternative 90B

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PLAN DEVELOPED BY _____ DRAFTED BY _____ CHECKED BY _____ FILE NAME = \$file\$



NOTES:
1. NOT ALL POTENTIAL PROPERTY ACQUISITIONS ARE LABELED. ONLY LOCATIONS DEEMED TO BE SIGNIFICANT ACQUISITIONS ARE SHOWN.

SYMBOLS:

- BRIDGE
- CULVERT
- EXISTING STATION
- PROPOSED STATION
- WATER OBSTRUCTION
- CP XX EXISTING CONTROL POINT
- CP XX NEW CONTROL POINT
- ROCK CUT

LEGEND:

- EXISTING TRACK
- TRACK TO BE REMOVED
- OTHER RAILROAD
- EXISTING ACCESS ROAD
- NEW/RELOCATED FREIGHT TRACK
- NEW PASSENGER TRACK
- NEW PASSENGER TRACK ON UPGRADED EXISTING TRACK
- POTENTIAL ACCESS ROAD
- NO-BUILD TRACK
- XX MPH PROPOSED PASSENGER SPEED
- XX MPH EXISTING PASSENGER SPEED
- XX MPH EXISTING/PROPOSED FREIGHT SPEED

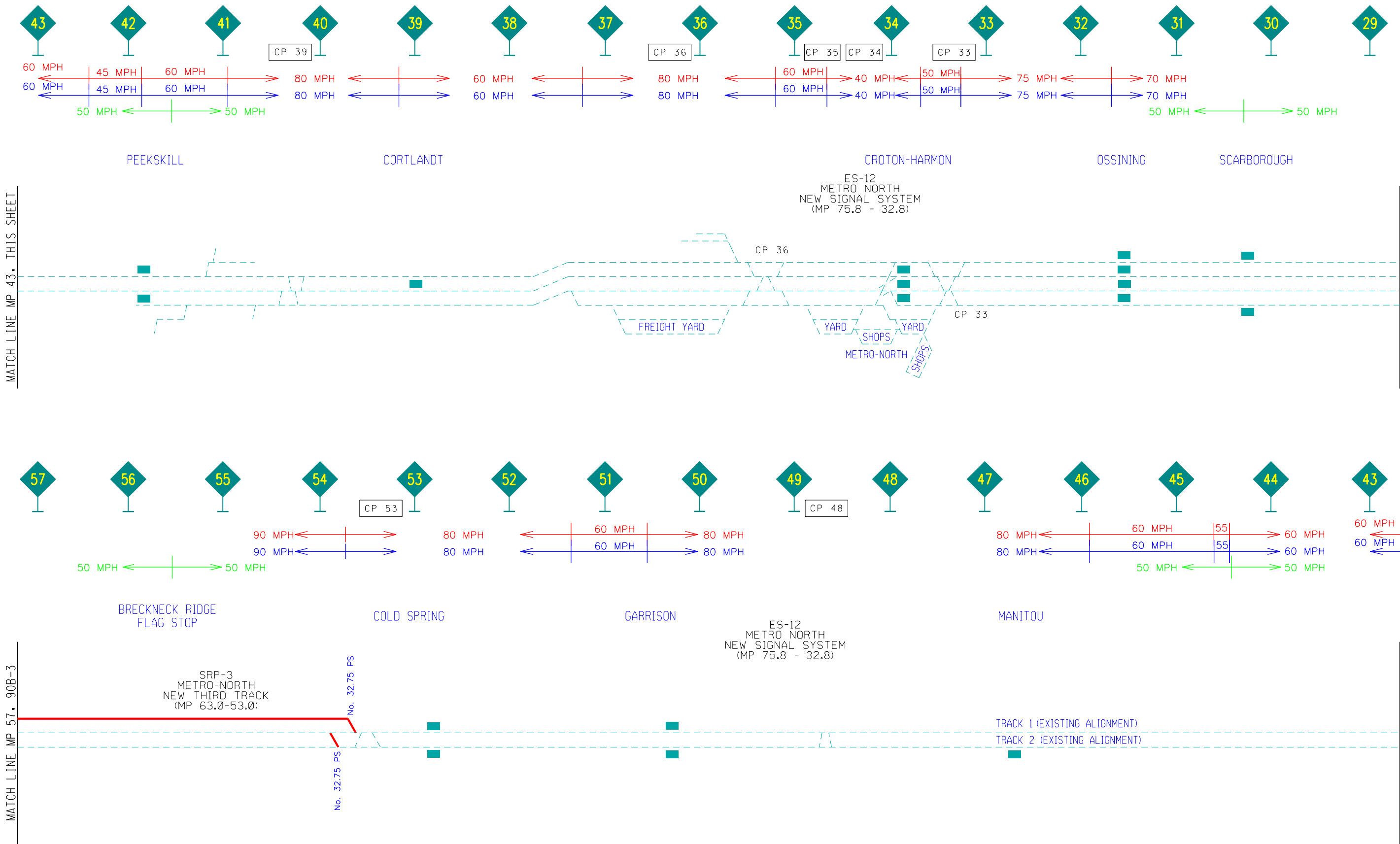
NYSDOT HIGH-SPEED INTERCITY PASSENGER RAIL
EMPIRE CORRIDOR, TIER 1 EIS

ALTERNATIVE 90B
ENGINEERED TRACK SCHEMATICS

CONTRACT NUMBER
XXXXXXXXXX

DRAWING NO. 90B-1
SHEET NO. 1
DATE: APRIL, 2012

PLAN DEVELOPED BY _____ DRAFTED BY _____ CHECKED BY _____ FILE NAME = \$file\$



NOTES:
1. NOT ALL POTENTIAL PROPERTY ACQUISITIONS ARE LABELED. ONLY LOCATIONS DEEMED TO BE SIGNIFICANT ACQUISITIONS ARE SHOWN.

SYMBOLS:

- BRIDGE
- CULVERT
- EXISTING STATION
- PROPOSED STATION
- WATER OBSTRUCTION
- EXISTING CONTROL POINT
- NEW CONTROL POINT
- ROCK CUT

LEGEND:

- EXISTING TRACK
- TRACK TO BE REMOVED
- OTHER RAILROAD
- EXISTING ACCESS ROAD
- NEW/RELOCATED FREIGHT TRACK
- NEW PASSENGER TRACK
- NEW PASSENGER TRACK ON UPGRADED EXISTING TRACK
- POTENTIAL ACCESS ROAD
- NO-BUILD TRACK
- XX MPH PROPOSED PASSENGER SPEED
- XX MPH EXISTING PASSENGER SPEED
- XX MPH EXISTING/PROPOSED FREIGHT SPEED

NYSDOT HIGH-SPEED INTERCITY PASSENGER RAIL
EMPIRE CORRIDOR, TIER 1 EIS

ALTERNATIVE 90B
ENGINEERED TRACK SCHEMATICS

CONTRACT NUMBER
XXXXXXXXXX

DRAWING NO. 90B-2
SHEET NO. 2
DATE: APRIL, 2012

PLAN DEVELOPED BY _____ DRAFTED BY _____ CHECKED BY _____ FILE NAME = \$file\$

NOTES:
1. NOT ALL POTENTIAL PROPERTY ACQUISITIONS ARE LABELED. ONLY LOCATIONS DEEMED TO BE SIGNIFICANT ACQUISITIONS ARE SHOWN.

SYMBOLS:


BRIDGE


CULVERT

 EXISTING STATION

 PROPOSED STATION

 WATER OBSTRUCTION

 CP XX EXISTING CONTROL POINT

 CP XX NEW CONTROL POINT

 ROCK CUT

LEGEND:

 EXISTING TRACK

 TRACK TO BE REMOVED

 OTHER RAILROAD

 EXISTING ACCESS ROAD

 NEW/RELOCATED FREIGHT TRACK

 NEW PASSENGER TRACK

 NEW PASSENGER TRACK ON UPGRADED EXISTING TRACK


 POTENTIAL ACCESS ROAD


 NO-BUILD TRACK

 XX MPH PROPOSED PASSENGER SPEED

 XX MPH EXISTING PASSENGER SPEED

 XX MPH EXISTING/PROPOSED FREIGHT SPEED



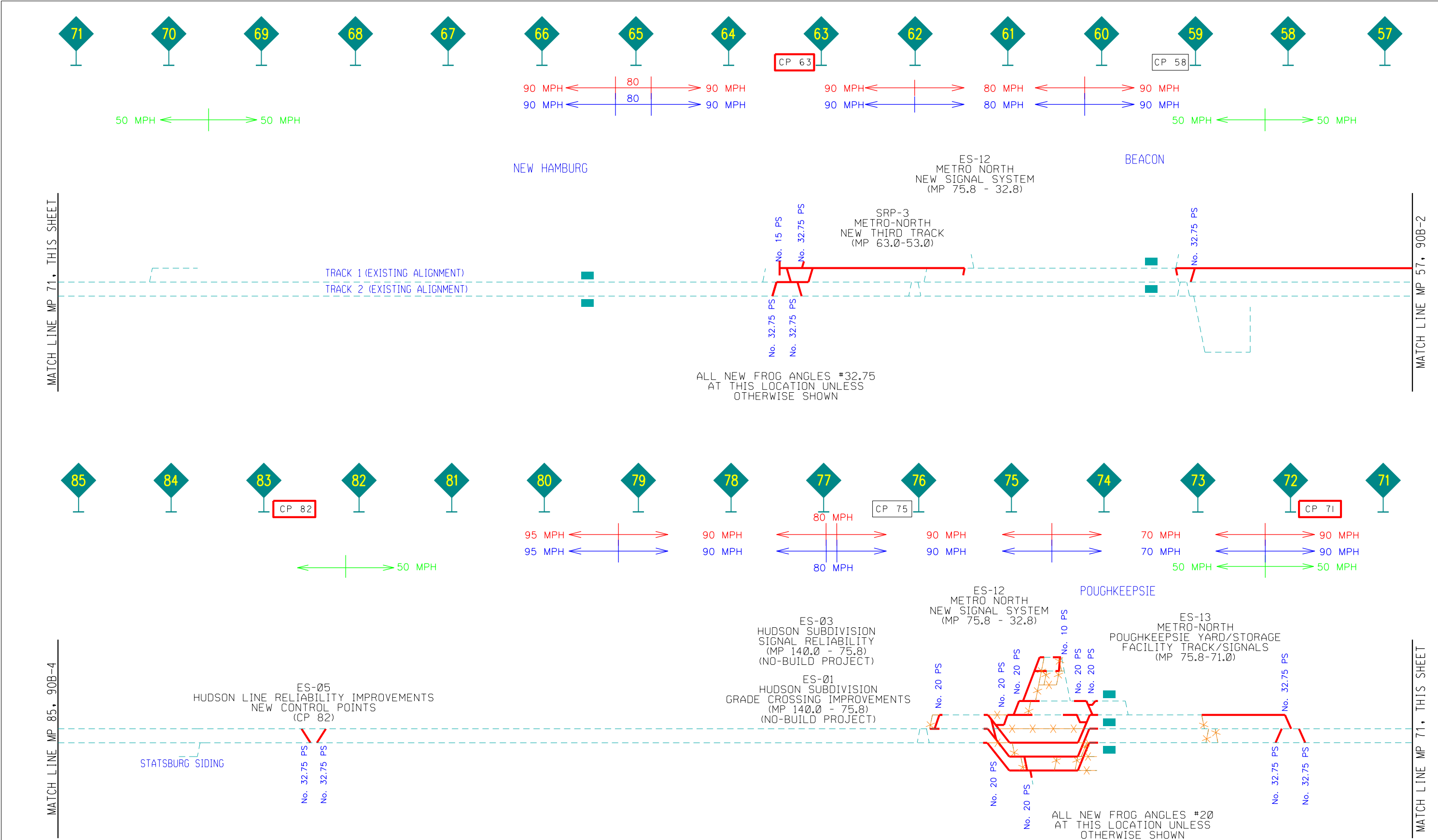


NYSDOT HIGH-SPEED INTERCITY PASSENGER RAIL
EMPIRE CORRIDOR, TIER 1 EIS

ALTERNATIVE 90B
ENGINEERED TRACK SCHEMATICS

CONTRACT NUMBER
XXXXXXXXXX

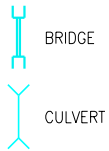
DRAWING NO. 90B-3
SHEET NO. 3
DATE: APRIL, 2012



NOTES:

1. NOT ALL POTENTIAL PROPERTY ACQUISITIONS ARE LABELED. ONLY LOCATIONS DEEMED TO BE SIGNIFICANT ACQUISITIONS ARE SHOWN.

SYMBOLS:



- EXISTING STATION
PROPOSED STATION
WATER OBSTRUCTION
CP XX EXISTING CONTROL POINT
CP XX NEW CONTROL POINT
ROCK CUT

LEGEND:

- EXISTING TRACK
TRACK TO BE REMOVED
OTHER RAILROAD
EXISTING ACCESS ROAD
NEW/RELOCATED FREIGHT TRACK
NEW PASSENGER TRACK

- NEW PASSENGER TRACK ON UPGRADED EXISTING TRACK
POTENTIAL ACCESS ROAD
NO-BUILD TRACK
XX MPH PROPOSED PASSENGER SPEED
XX MPH EXISTING PASSENGER SPEED
XX MPH EXISTING/PROPOSED FREIGHT SPEED



HNTB

NYS DOT HIGH-SPEED INTERCITY PASSENGER RAIL
EMPIRE CORRIDOR, TIER 1 EIS

ALTERNATIVE 90B
ENGINEERED TRACK SCHEMATICS

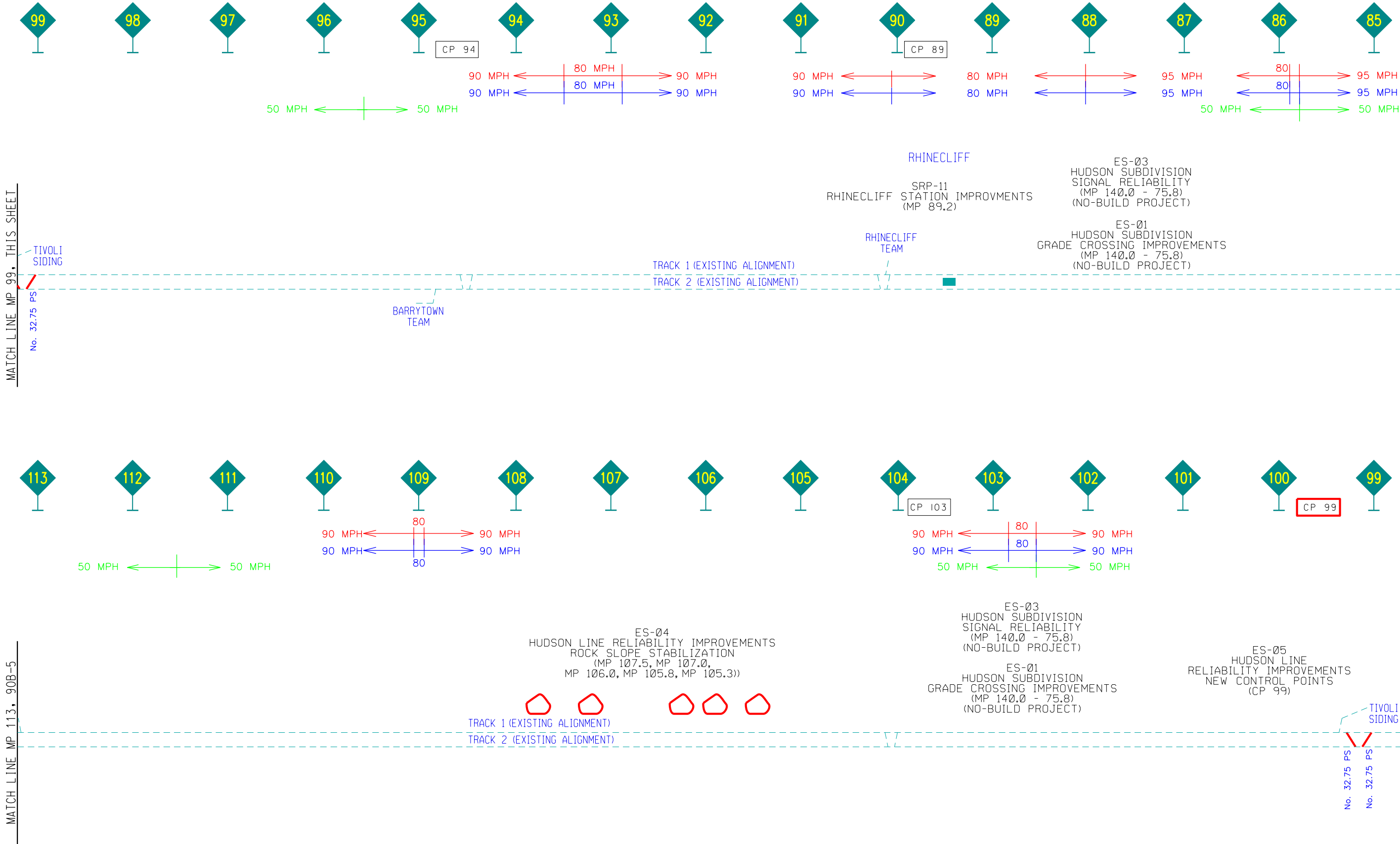
CONTRACT NUMBER

XXXXXXXXXX

DRAWING NO. 90B-4

SHEET NO. 4

DATE: APRIL, 2012

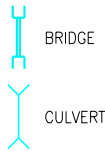


PLAN DEVELOPED BY _____ DRAFTED BY _____ CHECKED BY _____ FILE NAME = \$file\$

NOTES:

1. NOT ALL POTENTIAL PROPERTY ACQUISITIONS ARE LABELED. ONLY LOCATIONS DEEMED TO BE SIGNIFICANT ACQUISITIONS ARE SHOWN.

SYMBOLS:



- EXISTING STATION
PROPOSED STATION
WATER OBSTRUCTION
CP XX EXISTING CONTROL POINT
CP XX NEW CONTROL POINT
ROCK CUT

LEGEND:

- EXISTING TRACK
TRACK TO BE REMOVED
OTHER RAILROAD
EXISTING ACCESS ROAD
NEW/RELOCATED FREIGHT TRACK
NEW PASSENGER TRACK
NEW PASSENGER TRACK ON UPGRADED EXISTING TRACK
POTENTIAL ACCESS ROAD
NO-BUILD TRACK
XX MPH PROPOSED PASSENGER SPEED
XX MPH EXISTING PASSENGER SPEED
XX MPH EXISTING/PROPOSED FREIGHT SPEED



HNTB

NYS DOT HIGH-SPEED INTERCITY PASSENGER RAIL
EMPIRE CORRIDOR, TIER 1 EIS

ALTERNATIVE 90B
ENGINEERED TRACK SCHEMATICS

CONTRACT NUMBER

XXXXXXXXXX

DRAWING NO. 90B-5

SHEET NO. 5

DATE: APRIL, 2012

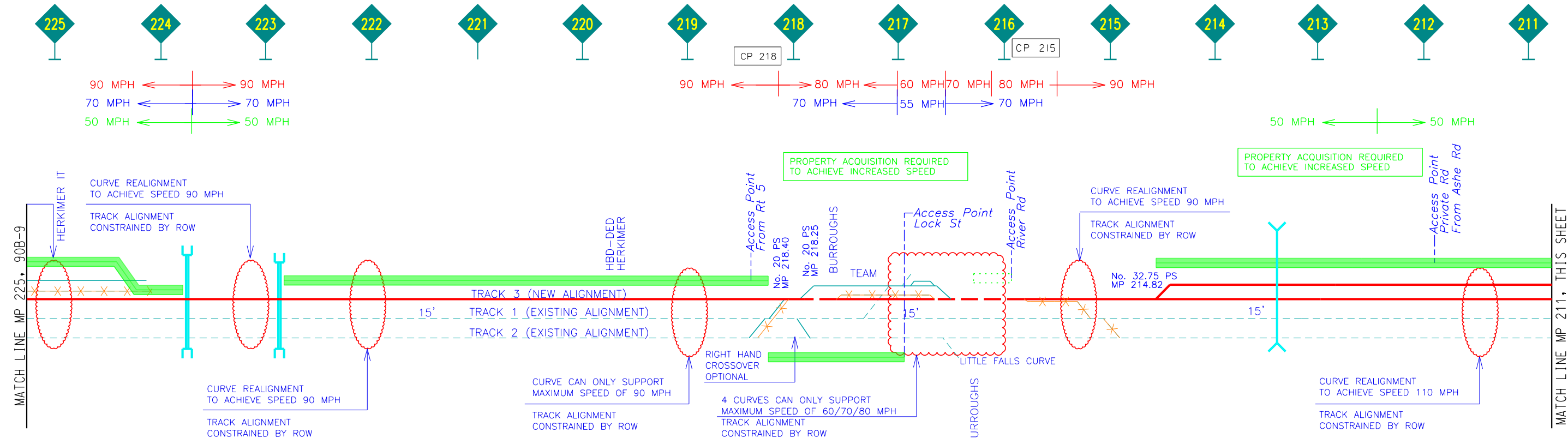
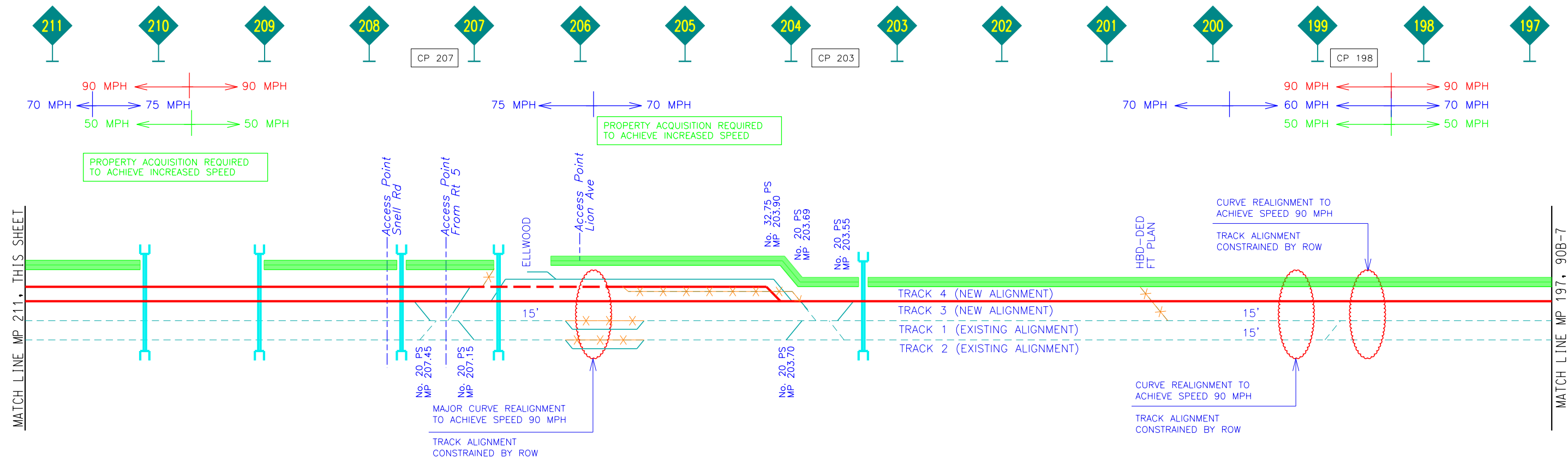
MATCH LINE MP 127, THIS SHEET

MATCH LINE MP 141, 90B-6

MATCH LINE MP 113, 90B-4

MATCH LINE MP 127, THIS SHEET

PLAN DEVELOPED BY _____ DRAFTED BY _____ CHECKED BY _____ FILE NAME = \$file\$



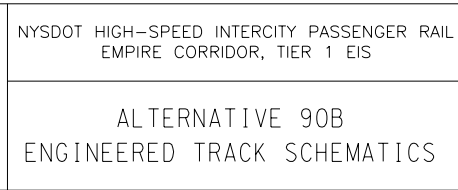

SYMBOLS:

- BRIDGE
- CULVERT
- EXISTING STATION
- PROPOSED STATION
- WATER OBSTRUCTION
- CP XX EXISTING CONTROL POINT
- CP XX NEW CONTROL POINT
- ROCK CUT

LEGEND:

- EXISTING TRACK
- TRACK TO BE REMOVED
- OTHER RAILROAD
- EXISTING ACCESS ROAD
- NEW/RELOCATED FREIGHT TRACK
- NEW PASSENGER TRACK
- NEW PASSENGER TRACK ON UPGRADED EXISTING TRACK
- POTENTIAL ACCESS ROAD
- NO-BUILD TRACK
- XX MPH PROPOSED PASSENGER SPEED
- XX MPH EXISTING PASSENGER SPEED
- XX MPH EXISTING/PROPOSED FREIGHT SPEED

NOTES:
1. NOT ALL POTENTIAL PROPERTY ACQUISITIONS ARE LABELED. ONLY LOCATIONS DEEMED TO BE SIGNIFICANT ACQUISITIONS ARE SHOWN.

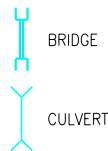


NYSDOT HIGH-SPEED INTERCITY PASSENGER RAIL EMPIRE CORRIDOR, TIER 1 EIS	CONTRACT NUMBER XXXXXXXXXX
ALTERNATIVE 90B ENGINEERED TRACK SCHEMATICS	DRAWING NO. 90B-8 SHEET NO. 8 DATE: APRIL, 2012

NOTES:

1. NOT ALL POTENTIAL PROPERTY ACQUISITIONS ARE LABELED. ONLY LOCATIONS DEEMED TO BE SIGNIFICANT ACQUISITIONS ARE SHOWN.

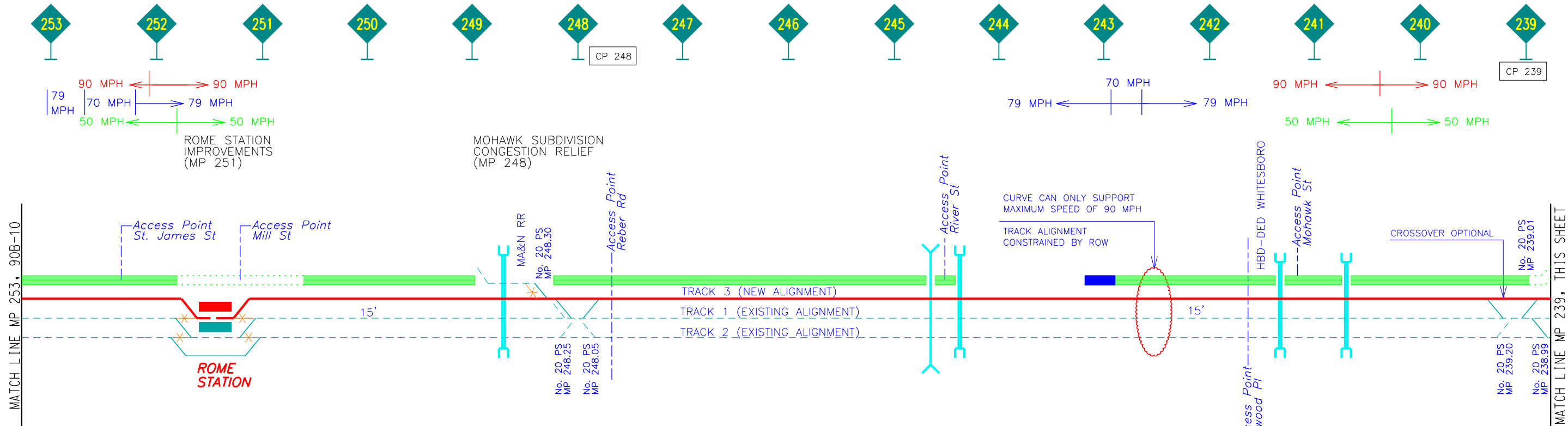
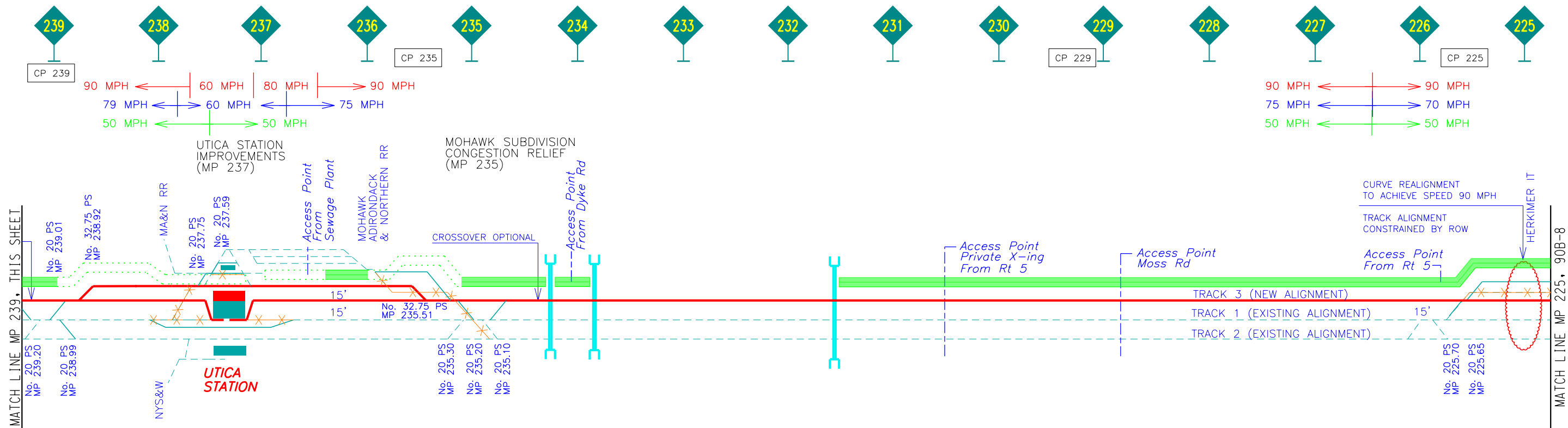
SYMBOLS:



- EXISTING STATION
PROPOSED STATION
WATER OBSTRUCTION
[CP XX] EXISTING CONTROL POINT
[CP XX] NEW CONTROL POINT
ROCK CUT

LEGEND:

- EXISTING TRACK
TRACK TO BE REMOVED
OTHER RAILROAD
EXISTING ACCESS ROAD
NEW/RELOCATED FREIGHT TRACK
NEW PASSENGER TRACK
NEW PASSENGER TRACK ON UPGRADED EXISTING TRACK
POTENTIAL ACCESS ROAD
NO-BUILD TRACK
XX MPH PROPOSED PASSENGER SPEED
XX MPH EXISTING PASSENGER SPEED
XX MPH EXISTING/PROPOSED FREIGHT SPEED



HNTB

NYS DOT HIGH-SPEED INTERCITY PASSENGER RAIL
EMPIRE CORRIDOR, TIER 1 EIS

ALTERNATIVE 90B
ENGINEERED TRACK SCHEMATICS

CONTRACT NUMBER

XXXXXXXXXX

DRAWING NO. 90B-9

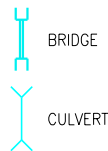
SHEET NO. 9

DATE: APRIL, 2012

NOTES:

1. NOT ALL POTENTIAL PROPERTY ACQUISITIONS ARE LABELED. ONLY LOCATIONS DEEMED TO BE SIGNIFICANT ACQUISITIONS ARE SHOWN.

SYMBOLS:



- EXISTING STATION
PROPOSED STATION
WATER OBSTRUCTION
[CP XX] EXISTING CONTROL POINT
[CP XX] NEW CONTROL POINT
ROCK CUT

LEGEND:

- EXISTING TRACK
TRACK TO BE REMOVED
OTHER RAILROAD
EXISTING ACCESS ROAD
NEW/RELOCATED FREIGHT TRACK
NEW PASSENGER TRACK
NEW PASSENGER TRACK ON UPGRADED EXISTING TRACK
POTENTIAL ACCESS ROAD
NO-BUILD TRACK
XX MPH PROPOSED PASSENGER SPEED
XX MPH EXISTING PASSENGER SPEED
XX MPH EXISTING/PROPOSED FREIGHT SPEED



HNTB

NYS DOT HIGH-SPEED INTERCITY PASSENGER RAIL
EMPIRE CORRIDOR, TIER 1 EIS

ALTERNATIVE 90B
ENGINEERED TRACK SCHEMATICS

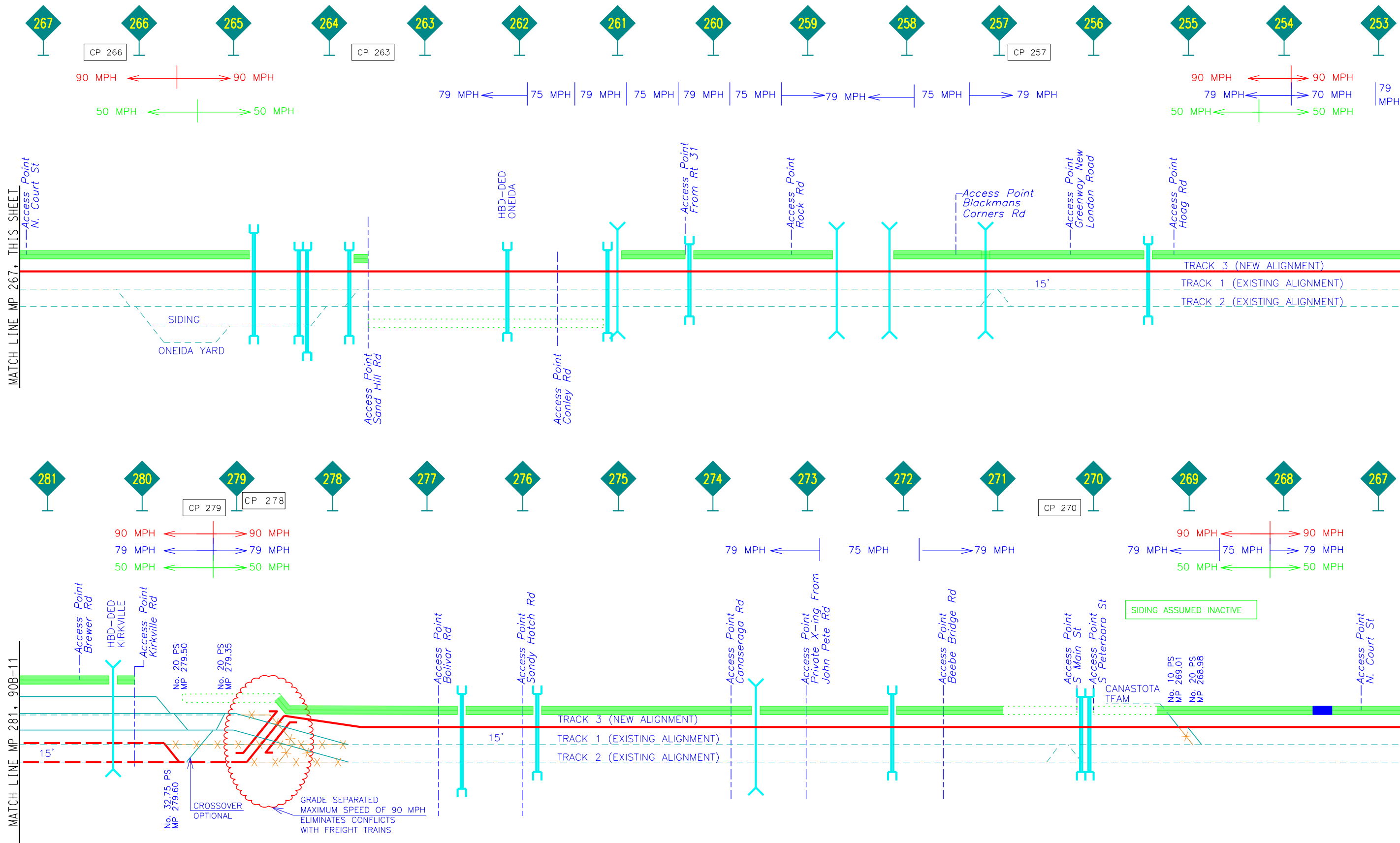
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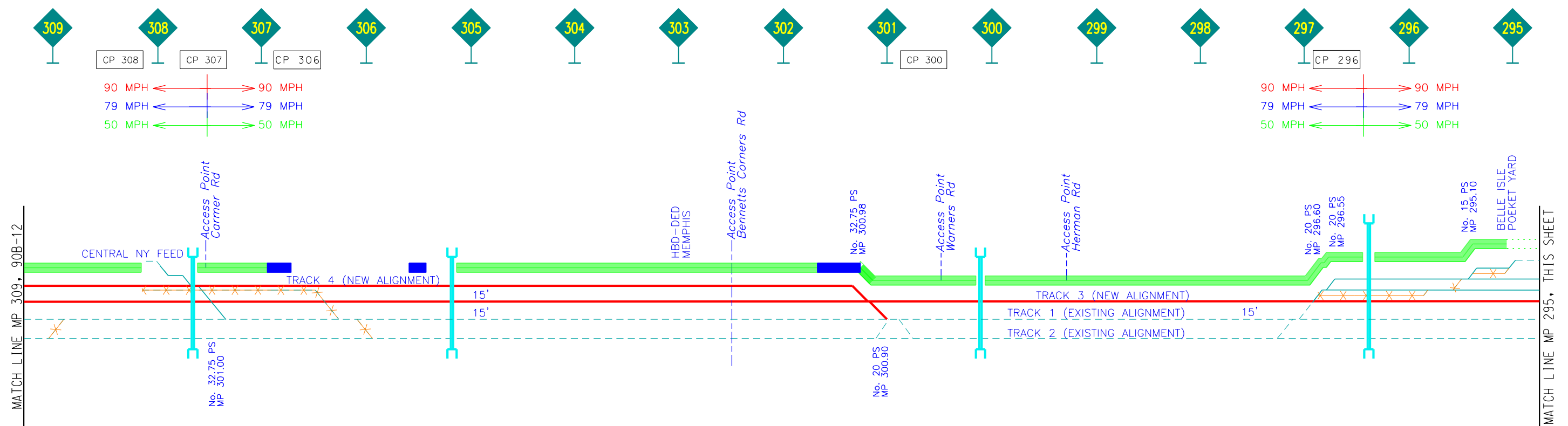
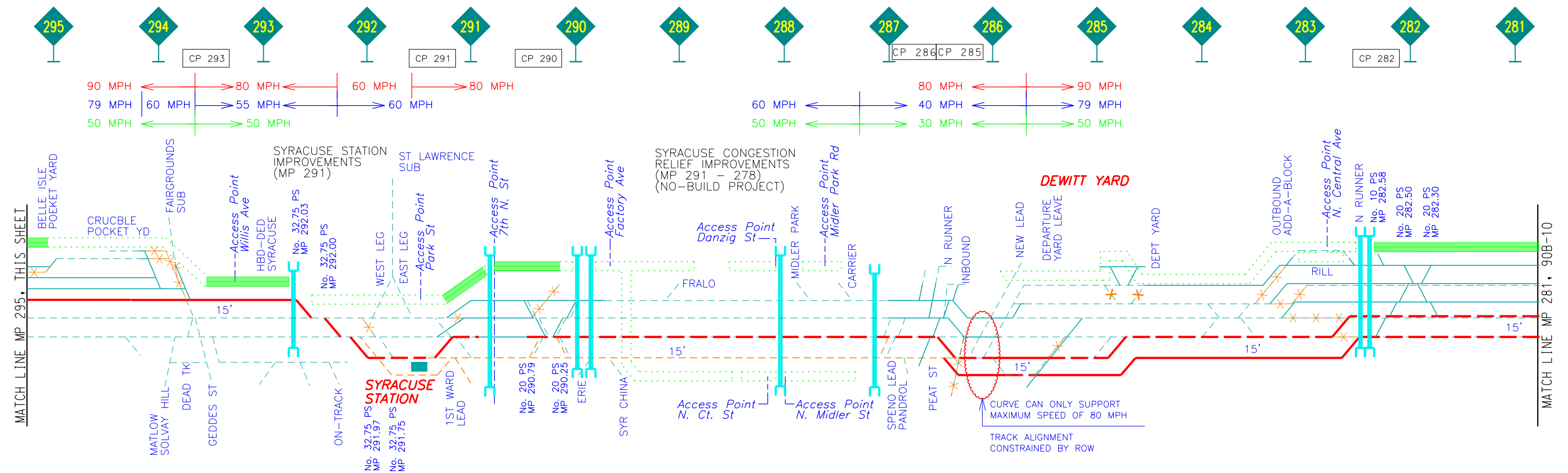
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DRAWING NO. 90B-10

SHEET NO. 10

DATE: APRIL, 2012





SYMBOLS:







LEGEND:




NOTES:

1. NOT ALL POTENTIAL PROPERTY ACQUISITIONS ARE LABELED. ONLY LOCATIONS DEEMED TO BE SIGNIFICANT ACQUISITIONS ARE SHOWN.

BRIDGE

CULVERT

 EXISTING STATION
 PROPOSED STATION
 WATER OBSTRUCTION
 EXISTING CONTROL POINT
 NEW CONTROL POINT
 ROCK CUT

 NEW PASSENGER TRACK ON
 UPGRADED EXISTING TRACK
 POTENTIAL ACCESS ROAD
 NO-BUILD TRACK


 XX MPH PROPOSED PASSENGER SPEED
 XX MPH EXISTING PASSENGER SPEED
 XX MPH EXISTING/PROPOSED FREIGHT SPEED



HNTB

NYSDOT HIGH-SPEED INTERCITY PASSENGER RAIL EMPIRE CORRIDOR, TIER 1 EIS			
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ALTERNATIVE 90B
ENGINEERED TRACK SCHEMATICS

CONTRACT NUMBER	
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DRAWING NO. 90B-11

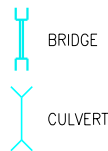
SHEET NO. 11

DATE: APRIL, 2012



PLAN DEVELOPED BY _____ DRAFTED BY _____ CHECKED BY _____ FILE NAME = \$file\$

NOTES:
1. NOT ALL POTENTIAL PROPERTY ACQUISITIONS ARE LABELED. ONLY LOCATIONS DEEMED TO BE SIGNIFICANT ACQUISITIONS ARE SHOWN.



EXISTING STATION
PROPOSED STATION
WATER OBSTRUCTION
CP XX EXISTING CONTROL POINT
CP XX NEW CONTROL POINT
ROCK CUT

EXISTING TRACK
TRACK TO BE REMOVED
OTHER RAILROAD
EXISTING ACCESS ROAD
NEW/RELOCATED FREIGHT TRACK
NEW PASSENGER TRACK

LEGEND:

NEW PASSENGER TRACK ON UPGRADED EXISTING TRACK
POTENTIAL ACCESS ROAD
NO-BUILD TRACK
XX MPH PROPOSED PASSENGER SPEED
XX MPH EXISTING PASSENGER SPEED
XX MPH EXISTING/PROPOSED FREIGHT SPEED



HNTB

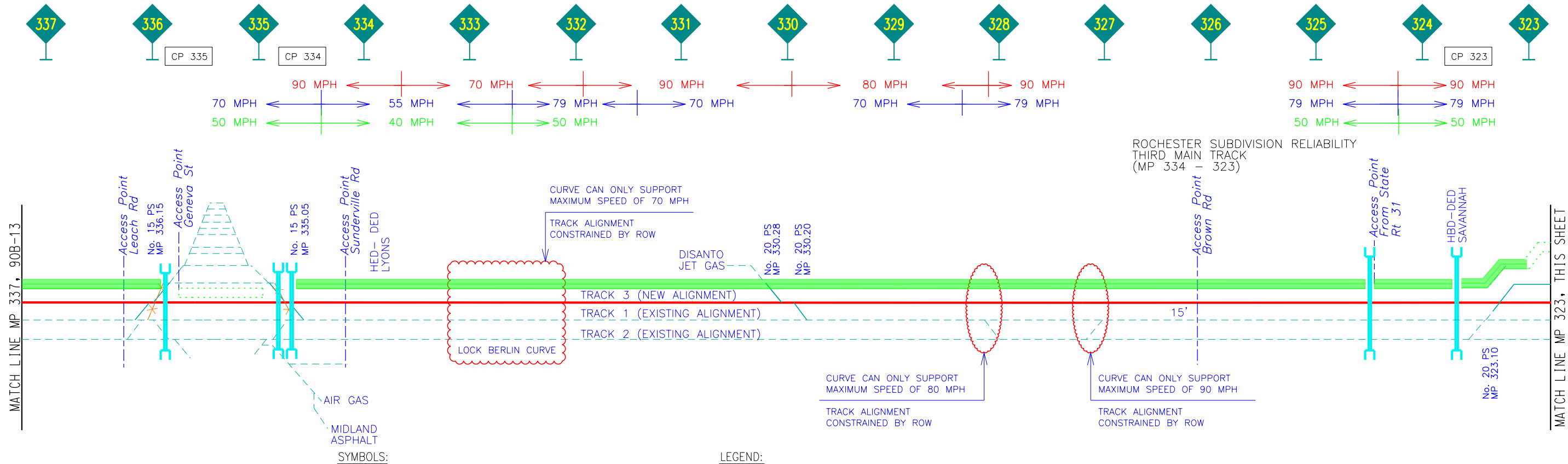
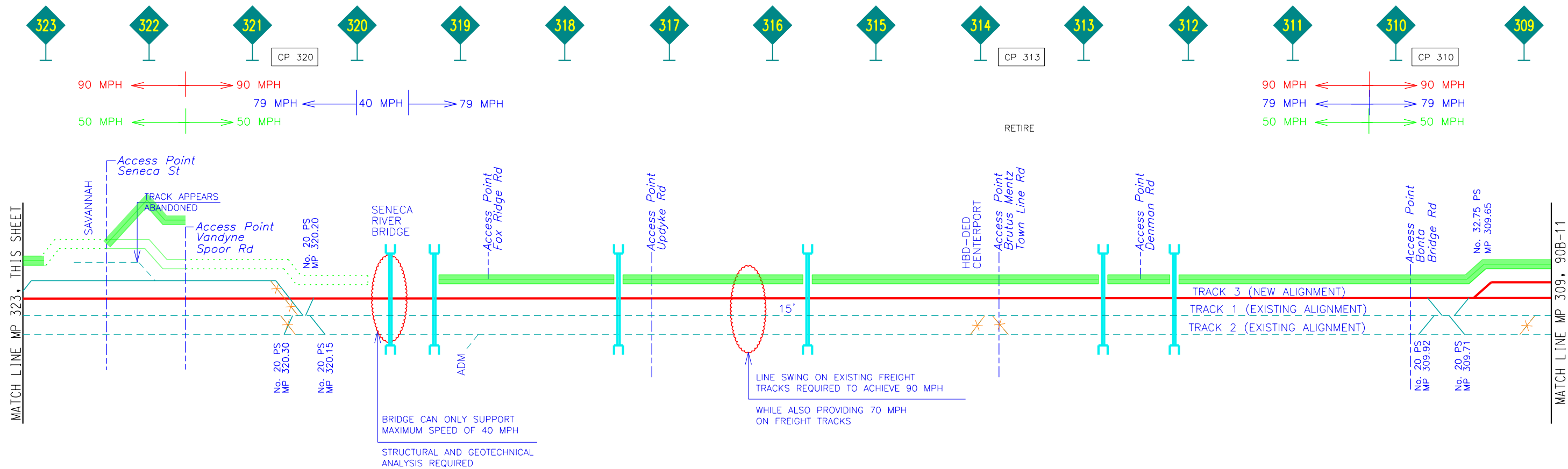
NYS DOT HIGH-SPEED INTERCITY PASSENGER RAIL
EMPIRE CORRIDOR, TIER 1 EIS

ALTERNATIVE 90B
ENGINEERED TRACK SCHEMATICS

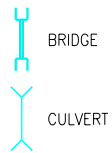
CONTRACT NUMBER

XXXXXXXXXX

DRAWING NO. 90B-12
SHEET NO. 12
DATE: APRIL, 2012



NOTES:
1. NOT ALL POTENTIAL PROPERTY ACQUISITIONS ARE LABELED. ONLY LOCATIONS DEEMED TO BE SIGNIFICANT ACQUISITIONS ARE SHOWN.



- SYMBOLS:
- EXISTING STATION (green diamond)
 - PROPOSED STATION (red diamond)
 - WATER OBSTRUCTION (blue rectangle)
 - CP XX EXISTING CONTROL POINT (black box with CP XX)
 - CP XX NEW CONTROL POINT (red box with CP XX)
 - ROCK CUT (red oval)

- LEGEND:
- EXISTING TRACK (dashed cyan line)
 - TRACK TO BE REMOVED (dashed red line with X's)
 - OTHER RAILROAD (solid cyan line)
 - EXISTING ACCESS ROAD (dotted green line)
 - NEW/RELOCATED FREIGHT TRACK (solid blue line)
 - NEW PASSENGER TRACK (solid red line)

- NEW PASSENGER TRACK ON UPGRADED EXISTING TRACK (dashed red line)
- POTENTIAL ACCESS ROAD (dashed green line)
- NO-BUILD TRACK (dashed orange line)
- XX MPH PROPOSED PASSENGER SPEED (red text)
- XX MPH EXISTING PASSENGER SPEED (blue text)
- XX MPH EXISTING/PROPOSED FREIGHT SPEED (green text)



HNTB

NYS DOT HIGH-SPEED INTERCITY PASSENGER RAIL
EMPIRE CORRIDOR, TIER 1 EIS

ALTERNATIVE 90B
ENGINEERED TRACK SCHEMATICS

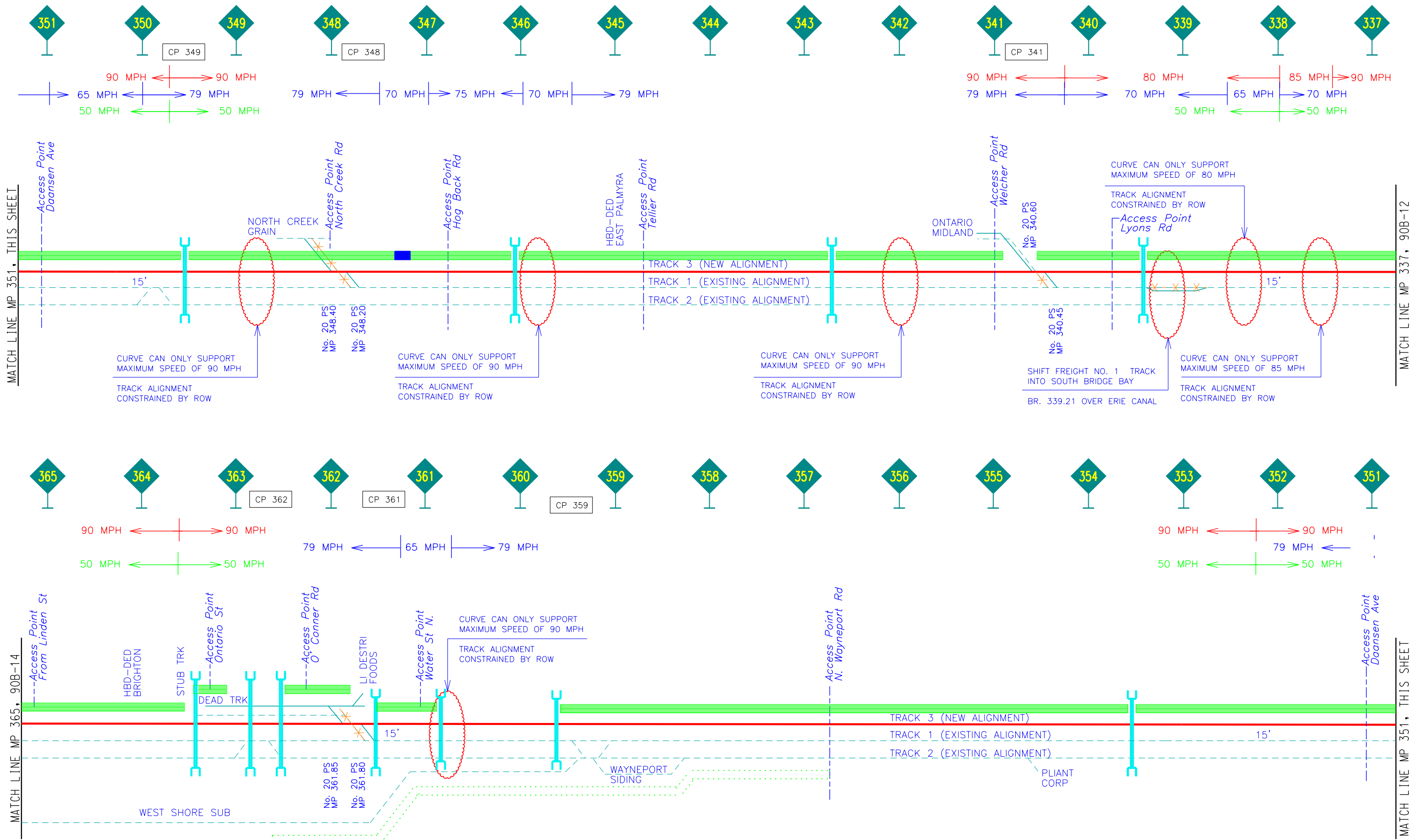
CONTRACT NUMBER

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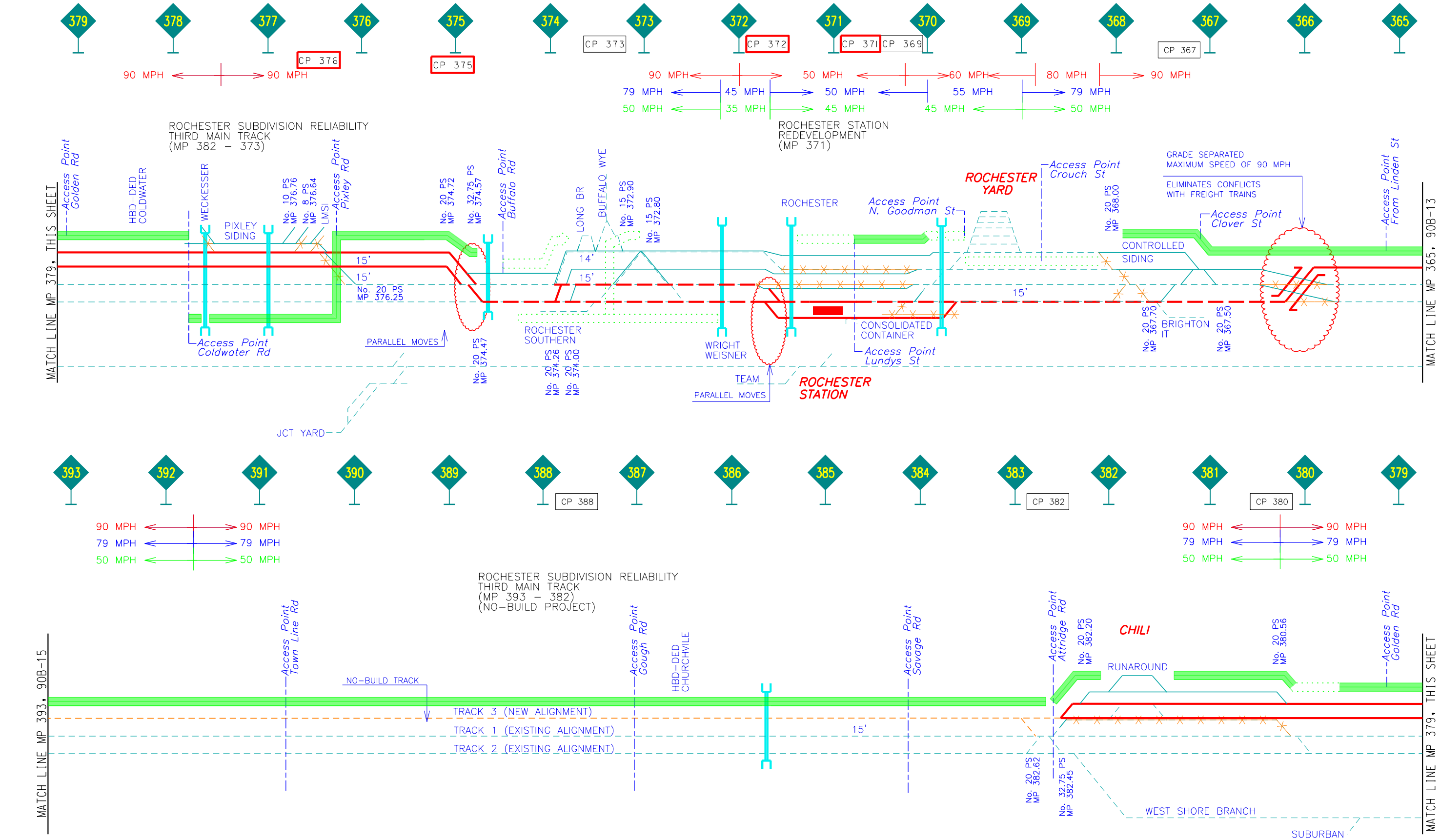
DRAWING NO. 90B-13

SHEET NO. 13

DATE: APRIL, 2012



PLAN DEVELOPED BY _____ DRAFTED BY _____ CHECKED BY _____ FILE NAME = \$file\$



NOTES:
1. NOT ALL POTENTIAL PROPERTY ACQUISITIONS ARE LABELED. ONLY LOCATIONS DEEMED TO BE SIGNIFICANT ACQUISITIONS ARE SHOWN.

SYMBOLS:

- BRIDGE
- CULVERT
- EXISTING STATION
- PROPOSED STATION
- WATER OBSTRUCTION
- CP XX EXISTING CONTROL POINT
- CP XX NEW CONTROL POINT
- ROCK CUT

LEGEND:

- EXISTING TRACK
- TRACK TO BE REMOVED
- OTHER RAILROAD
- EXISTING ACCESS ROAD
- NEW/RELOCATED FREIGHT TRACK
- NEW PASSENGER TRACK
- NEW PASSENGER TRACK ON UPGRADED EXISTING TRACK
- POTENTIAL ACCESS ROAD
- NO-BUILD TRACK
- XX MPH PROPOSED PASSENGER SPEED
- XX MPH EXISTING PASSENGER SPEED
- XX MPH EXISTING/PROPOSED FREIGHT SPEED



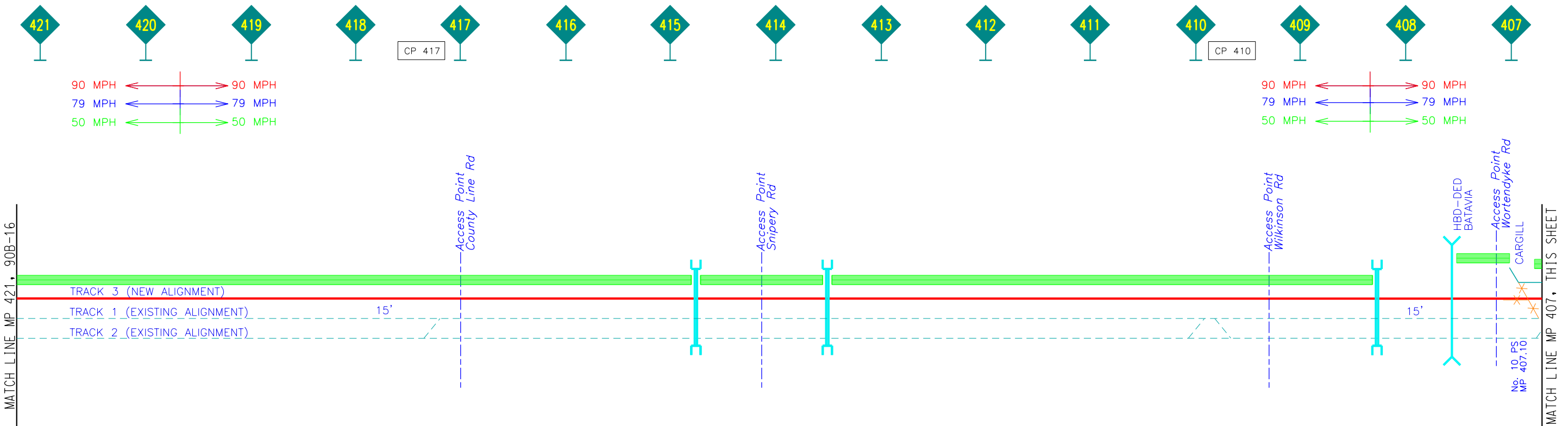
HNTB

NYS DOT HIGH-SPEED INTERCITY PASSENGER RAIL
EMPIRE CORRIDOR, TIER 1 EIS

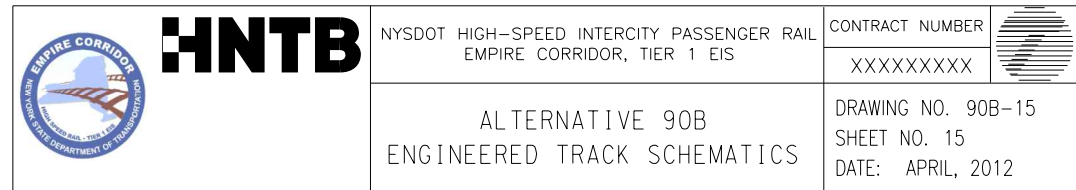
ALTERNATIVE 90B
ENGINEERED TRACK SCHEMATICS

CONTRACT NUMBER
XXXXXXXXXX

DRAWING NO. 90B-14
SHEET NO. 14
DATE: APRIL, 2012





1. NOT ALL POTENTIAL PROPERTY ACQUISITIONS ARE LABELED. ONLY LOCATIONS DEEMED TO BE SIGNIFICANT ACQUISITIONS ARE SHOWN.





NOTES:


1. NOT ALL POTENTIAL PROPERTY ACQUISITIONS ARE LABELED. ONLY LOCATIONS DEEMED TO BE SIGNIFICANT ACQUISITIONS ARE SHOWN.


BRIDGE


CULVERT

 EXISTING STATION

 PROPOSED STATION


 WATER OBSTRUCTION


CP XX


 EXISTING CONTROL POINT


CP XX


 NEW CONTROL POINT


 ROCK CUT


 EXISTING TRACK


 TRACK TO BE REMOVED


 OTHER RAILROAD


 EXISTING ACCESS ROAD

 NEW/RELOCATED FREIGHT TRACK

 NEW PASSENGER TRACK

 NEW PASSENGER TRACK ON UPGRADED EXISTING TRACK

 POTENTIAL ACCESS ROAD

 NO-BUILD TRACK

XX MPH



 PROPOSED PASSENGER SPEED

XX MPH

 EXISTING PASSENGER SPEED

XX MPH

 EXISTING/PROPOSED FREIGHT SPEED




NYS DOT HIGH-SPEED INTERCITY PASSENGER RAIL
EMPIRE CORRIDOR, TIER 1 EIS

ALTERNATIVE 90B
ENGINEERED TRACK SCHEMATICS

CONTRACT NUMBER
XXXXXXXXXX

DRAWING NO. 90B-17
SHEET NO. 17
DATE: APRIL, 2012



MATCH LINE MP 24, THIS SHEET

MATCH LINE MP 10, 90B-16

MATCH LINE MP 24, THIS SHEET

NIAGARA FALLS STATION
NEW INTERMODAL TRANSPORTATION CENTER
(MP 28)
(NO-BUILD PROJECT)

NIAGARA FALLS MAINTENANCE
FACILITY / YARD IMPROVEMENTS
(MP 27 - 27)

NIAGARA SUBDIVISION
NEW SIGNAL SYSTEM
(MP 28 - 8)

NIAGARA SUBDIVISION
DOUBLE TRACK
(MP 22 - 17)

NIAGARA SUBDIVISION GRADE
CROSSING IMPROVEMENTS
(MP 28 - 1)

WURLITZER IT
LOCKPORT RUNNER IT
ERIE IT
TONAWANDA IT
84 LUMBER
MARTIN FIREPROOFING

60 MPH
40 MPH
60 MPH
40 MPH
40 MPH
40 MPH

45 MPH
45 MPH
40 MPH
45 MPH
60 MPH
60 MPH

BRIDGE TO TORONTO

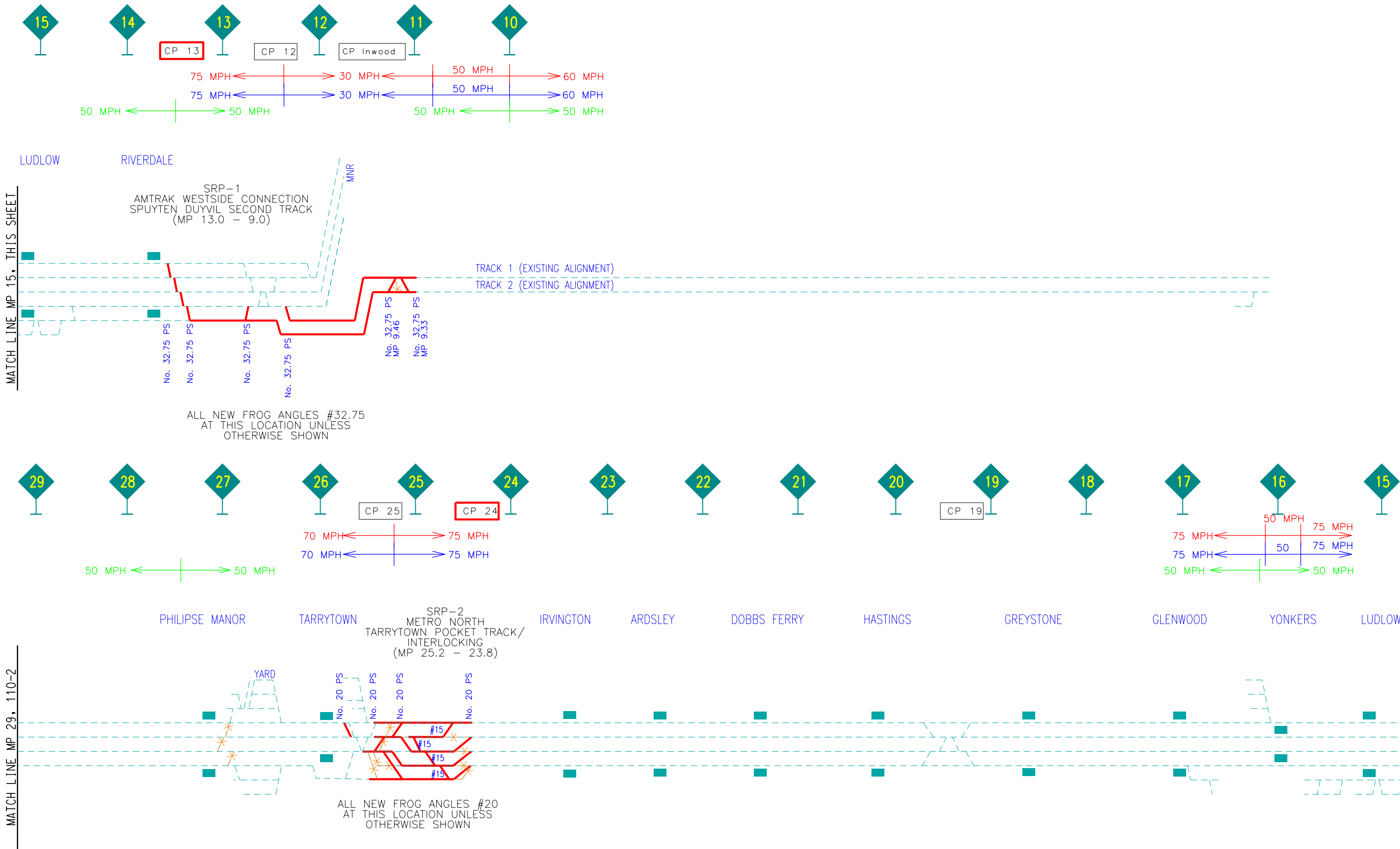
NIAGARA FALLS STATION

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Track Schematics for Alternative 110

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PLAN DEVELOPED BY _____ DRAFTED BY _____ CHECKED BY _____ FILE NAME = \$file\$



NOTES:
1. NOT ALL POTENTIAL PROPERTY ACQUISITIONS ARE LABELED. ONLY LOCATIONS DEEMED TO BE SIGNIFICANT ACQUISITIONS ARE SHOWN.

SYMBOLS:

- BRIDGE
- CULVERT
- EXISTING STATION
- PROPOSED STATION
- WATER OBSTRUCTION
- EXISTING CONTROL POINT
- NEW CONTROL POINT
- ROCK CUT

LEGEND:

- EXISTING TRACK
- TRACK TO BE REMOVED
- OTHER RAILROAD
- EXISTING ACCESS ROAD
- NEW/RELOCATED FREIGHT TRACK
- NEW PASSENGER TRACK
- NEW PASSENGER TRACK ON UPGRADED EXISTING TRACK
- POTENTIAL ACCESS ROAD
- NO-BUILD TRACK
- XX MPH PROPOSED PASSENGER SPEED
- XX MPH EXISTING PASSENGER SPEED
- XX MPH EXISTING/PROPOSED FREIGHT SPEED

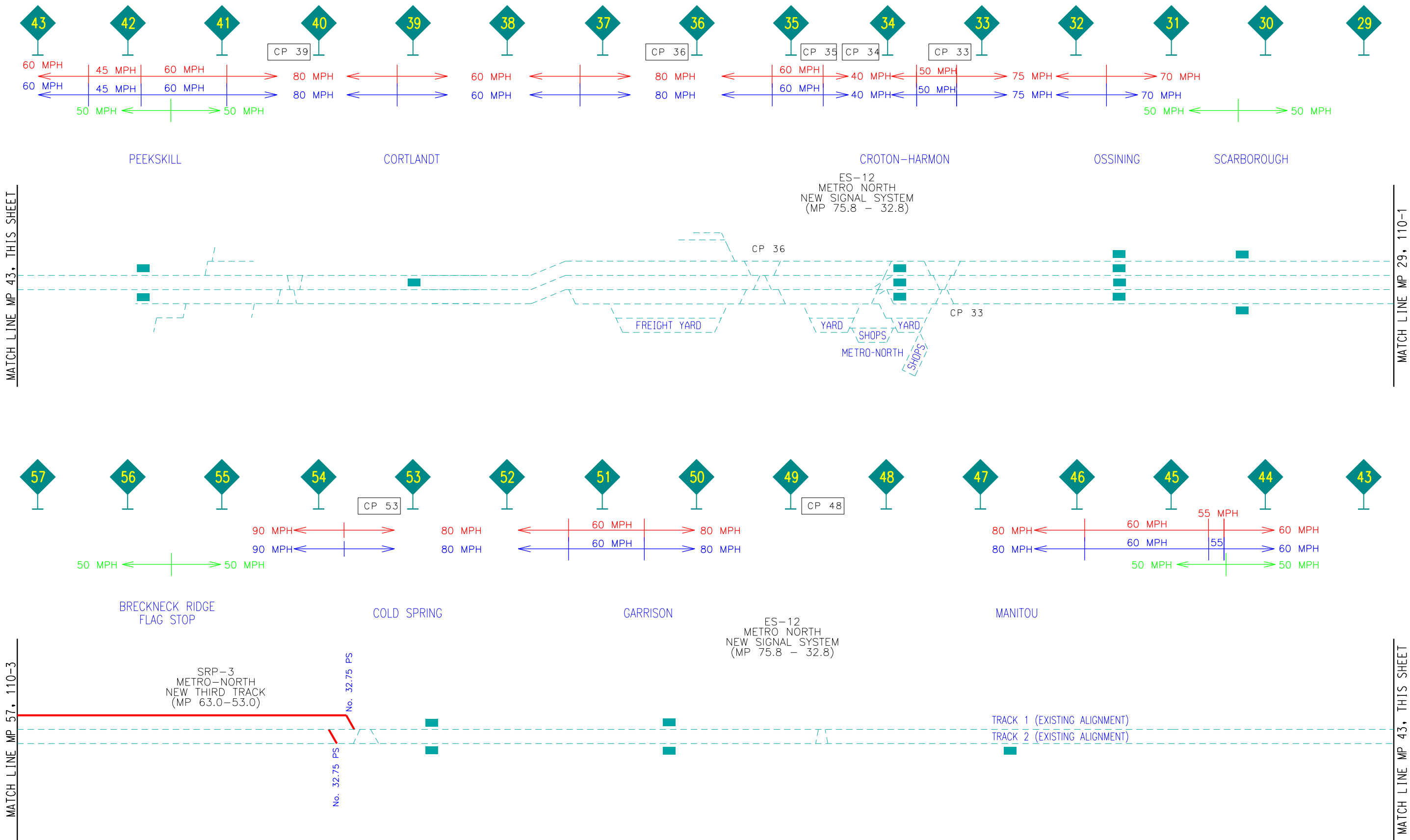
NYSDOT HIGH-SPEED INTERCITY PASSENGER RAIL
EMPIRE CORRIDOR, TIER 1 EIS

ALTERNATIVE 110
ENGINEERED TRACK SCHEMATICS

CONTRACT NUMBER
XXXXXXXXXX

DRAWING NO. 110-1
SHEET NO. 1
DATE: FEBRUARY, 2012

PLAN DEVELOPED BY _____ DRAFTED BY _____ CHECKED BY _____ FILE NAME = \$file\$



NOTES:
1. NOT ALL POTENTIAL PROPERTY ACQUISITIONS ARE LABELED. ONLY LOCATIONS DEEMED TO BE SIGNIFICANT ACQUISITIONS ARE SHOWN.

SYMBOLS:

- BRIDGE
- CULVERT
- EXISTING STATION
- PROPOSED STATION
- WATER OBSTRUCTION
- EXISTING CONTROL POINT
- NEW CONTROL POINT
- ROCK CUT

LEGEND:

- EXISTING TRACK
- TRACK TO BE REMOVED
- OTHER RAILROAD
- EXISTING ACCESS ROAD
- NEW/RELOCATED FREIGHT TRACK
- NEW PASSENGER TRACK
- NEW PASSENGER TRACK ON UPGRADED EXISTING TRACK
- POTENTIAL ACCESS ROAD
- NO-BUILD TRACK
- XX MPH PROPOSED PASSENGER SPEED
- XX MPH EXISTING PASSENGER SPEED
- XX MPH EXISTING/PROPOSED FREIGHT SPEED

NYSDOT HIGH-SPEED INTERCITY PASSENGER RAIL
EMPIRE CORRIDOR, TIER 1 EIS

ALTERNATIVE 110
ENGINEERED TRACK SCHEMATICS

CONTRACT NUMBER
XXXXXXXXXX

DRAWING NO. 110-2
SHEET NO. 2
DATE: FEBRUARY, 2012

PLAN DEVELOPED BY _____ DRAFTED BY _____ CHECKED BY _____ FILE NAME = \$file\$

NOTES:
1. NOT ALL POTENTIAL PROPERTY ACQUISITIONS ARE LABELED. ONLY LOCATIONS DEEMED TO BE SIGNIFICANT ACQUISITIONS ARE SHOWN.

SYMBOLS:

	BRIDGE		EXISTING STATION
	CULVERT		PROPOSED STATION
			WATER OBSTRUCTION
			EXISTING CONTROL POINT
			NEW CONTROL POINT
			ROCK CUT

LEGEND:

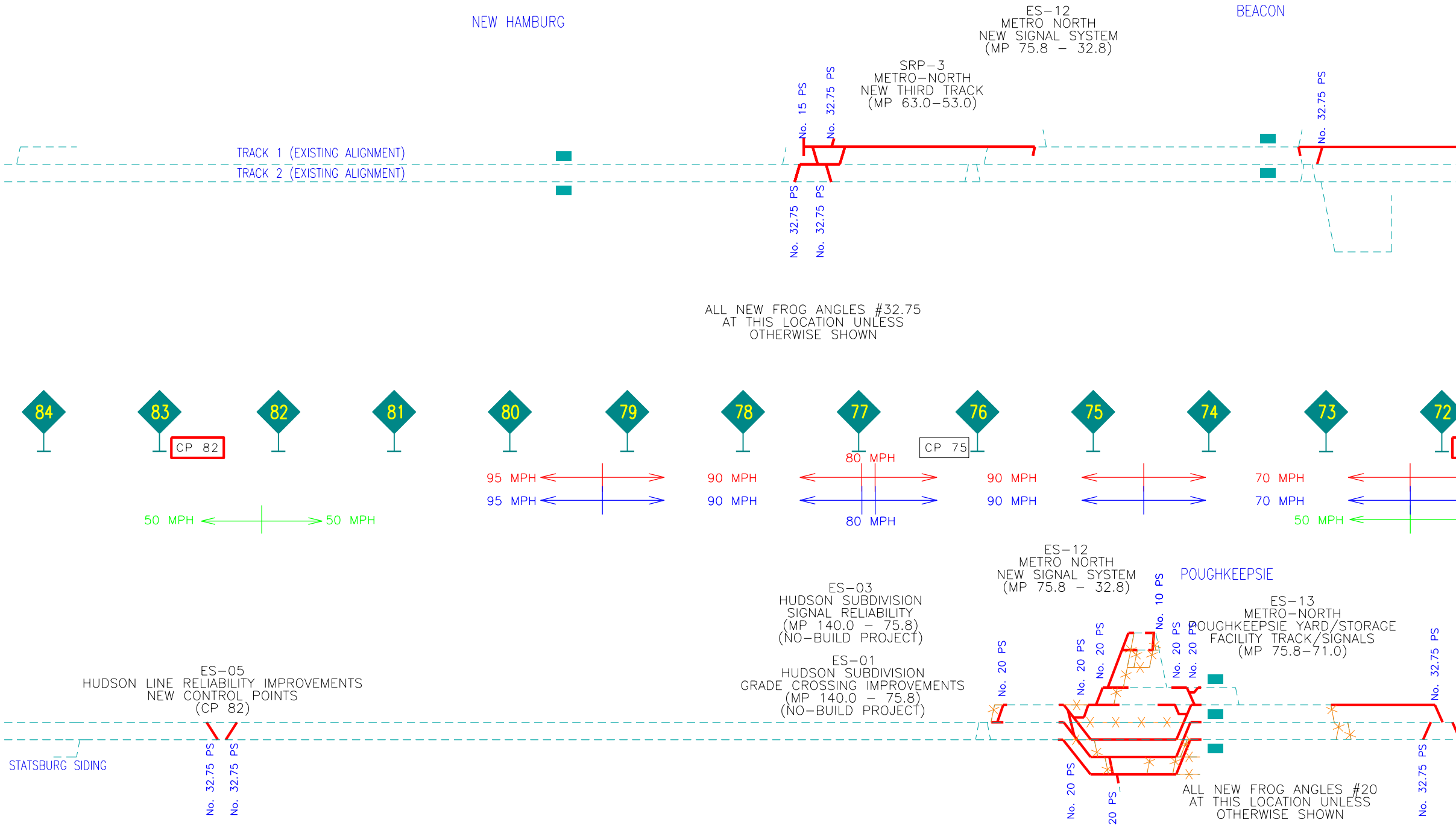
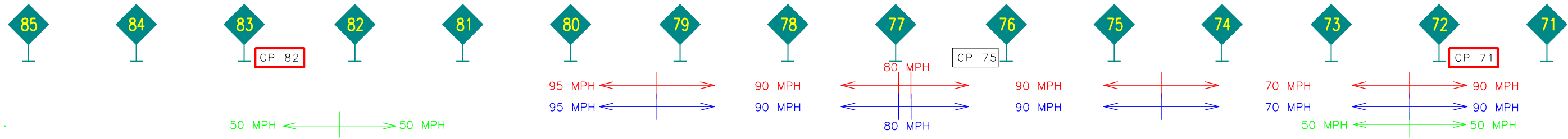
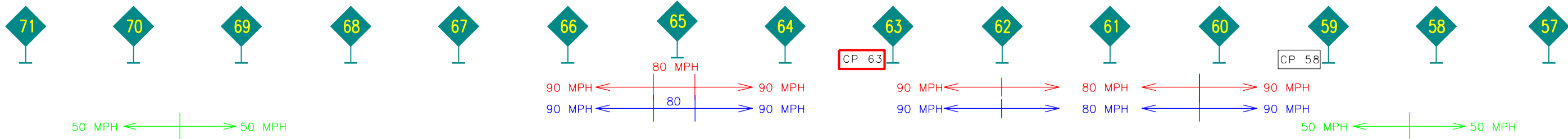
	EXISTING TRACK		NEW PASSENGER TRACK ON UPGRADED EXISTING TRACK
	TRACK TO BE REMOVED		POTENTIAL ACCESS ROAD
	OTHER RAILROAD		NO-BUILD TRACK
	EXISTING ACCESS ROAD		XX MPH PROPOSED PASSENGER SPEED
	NEW/RELOCATED FREIGHT TRACK		XX MPH EXISTING PASSENGER SPEED
	NEW PASSENGER TRACK		XX MPH EXISTING/PROPOSED FREIGHT SPEED

MATCH LINE MP 71, THIS SHEET

MATCH LINE MP 85, 110-4

MATCH LINE MP 57, 110-2

MATCH LINE MP 71, THIS SHEET

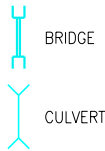


 HNTB	NYS DOT HIGH-SPEED INTERCITY PASSENGER RAIL EMPIRE CORRIDOR, TIER 1 EIS	CONTRACT NUMBER XXXXXXXXXX	
	ALTERNATIVE 110 ENGINEERED TRACK SCHEMATICS			DRAWING NO. 110-3 SHEET NO. 3 DATE: FEBRUARY, 2012

NOTES:

1. NOT ALL POTENTIAL PROPERTY ACQUISITIONS ARE LABELED. ONLY LOCATIONS DEEMED TO BE SIGNIFICANT ACQUISITIONS ARE SHOWN.

SYMBOLS:



- EXISTING STATION
PROPOSED STATION
WATER OBSTRUCTION
CP XX EXISTING CONTROL POINT
CP XX NEW CONTROL POINT
ROCK CUT

LEGEND:

- EXISTING TRACK
TRACK TO BE REMOVED
OTHER RAILROAD
EXISTING ACCESS ROAD
NEW/RELOCATED FREIGHT TRACK
NEW PASSENGER TRACK

- NEW PASSENGER TRACK ON UPGRADED EXISTING TRACK
POTENTIAL ACCESS ROAD
NO-BUILD TRACK
XX MPH PROPOSED PASSENGER SPEED
XX MPH EXISTING PASSENGER SPEED
XX MPH EXISTING/PROPOSED FREIGHT SPEED



HNTB

NYS DOT HIGH-SPEED INTERCITY PASSENGER RAIL
EMPIRE CORRIDOR, TIER 1 EIS

ALTERNATIVE 110
ENGINEERED TRACK SCHEMATICS

CONTRACT NUMBER

XXXXXXXXXX

DRAWING NO. 110-4

SHEET NO. 4

DATE: FEBRUARY, 2012

MATCH LINE MP 99, THIS SHEET

TIVOLI SIDING
No. 32.75 PS

50 MPH

CP 94

90 MPH
80 MPH
90 MPH
90 MPH
80 MPH
90 MPH

RHINECLIFF
SRP-11
RHINECLIFF STATION IMPROVEMENTS
(MP 89.2)

RHINECLIFF TEAM

TRACK 1 (EXISTING ALIGNMENT)
TRACK 2 (EXISTING ALIGNMENT)

ES-03
HUDSON SUBDIVISION
SIGNAL RELIABILITY
(MP 140.0 - 75.8)
(NO-BUILD PROJECT)
ES-01
HUDSON SUBDIVISION
GRADE CROSSING IMPROVEMENTS
(MP 140.0 - 75.8)
(NO-BUILD PROJECT)

MATCH LINE MP 85, 110-3

MATCH LINE MP 113, 110-5

50 MPH

80 MPH

90 MPH
80
90 MPH
90 MPH
80
90 MPH

ES-04
HUDSON LINE RELIABILITY IMPROVEMENTS
ROCK SLOPE STABILIZATION
(MP 107.5, MP 107.0,
MP 106.0, MP 105.8, MP 105.3))

TRACK 1 (EXISTING ALIGNMENT)
TRACK 2 (EXISTING ALIGNMENT)

ES-03
HUDSON SUBDIVISION
SIGNAL RELIABILITY
(MP 140.0 - 75.8)
(NO-BUILD PROJECT)
ES-01
HUDSON SUBDIVISION
GRADE CROSSING IMPROVEMENTS
(MP 140.0 - 75.8)
(NO-BUILD PROJECT)

ES-05
HUDSON LINE
RELIABILITY IMPROVEMENTS
NEW CONTROL POINTS
(CP 99)

TIVOLI SIDING
No. 32.75 PS
No. 32.75 PS

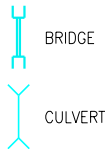
MATCH LINE MP 99, THIS SHEET

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NOTES:

1. NOT ALL POTENTIAL PROPERTY ACQUISITIONS ARE LABELED. ONLY LOCATIONS DEEMED TO BE SIGNIFICANT ACQUISITIONS ARE SHOWN.

SYMBOLS:



- EXISTING STATION
PROPOSED STATION
WATER OBSTRUCTION
[CP XX] EXISTING CONTROL POINT
[CP XX] NEW CONTROL POINT
ROCK CUT

LEGEND:

- EXISTING TRACK
TRACK TO BE REMOVED
OTHER RAILROAD
EXISTING ACCESS ROAD
NEW/RELOCATED FREIGHT TRACK
NEW PASSENGER TRACK
NEW PASSENGER TRACK ON UPGRADED EXISTING TRACK
POTENTIAL ACCESS ROAD
NO-BUILD TRACK
XX MPH PROPOSED PASSENGER SPEED
XX MPH EXISTING PASSENGER SPEED
XX MPH EXISTING/PROPOSED FREIGHT SPEED



HNTB

NYS DOT HIGH-SPEED INTERCITY PASSENGER RAIL
EMPIRE CORRIDOR, TIER 1 EIS

ALTERNATIVE 110
ENGINEERED TRACK SCHEMATICS

CONTRACT NUMBER

XXXXXXXXXX

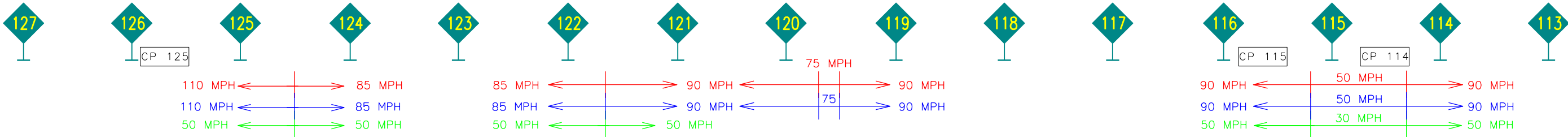
DRAWING NO. 110-5
SHEET NO. 5
DATE: FEBRUARY, 2012

MATCH LINE MP 127, THIS SHEET

MATCH LINE MP 141, 110-6

MATCH LINE MP 127, THIS SHEET

MATCH LINE MP 113, 110-4



ES-04
HUDSON LINE RELIABILITY IMPROVEMENTS
ROCK SLOPE STABILIZATION
(MP 119.5)

ES-14
HUDSON STATION
GEOMETRY IMPROVEMENTS
(MP 115.0-113.5)

SCHODAK SD
STUYVESANT

CLAVELACK
L.I.
HUDSON
RIVER TK
HUDSON YARD

ALL NEW FROG ANGLES #20
AT THIS LOCATION UNLESS
OTHERWISE SHOWN



ES-01
HUDSON SUBDIVISION
GRADE CROSSING IMPROVEMENTS
(MP 140.0 - 75.8)
(NO-BUILD PROJECT)

HUDSON SUBDIVISION SMALL
BRIDGE IMPROVEMENTS
(MP 140 - 75.8)

ES-03
HUDSON SUBDIVISION
SIGNAL RELIABILITY
(MP 140.0 - 75.8)
(NO-BUILD PROJECT)

ES-05
HUDSON LINE RELIABILITY IMPROVEMENTS
NEW CONTROL POINTS
(CP 136)

ES-04
HUDSON LINE RELIABILITY IMPROVEMENTS
ROCK SLOPE STABILIZATION
(MP 130.0, MP 129.1, MP 128.9, MP 128.1)

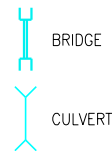
TRACK 1 (EXISTING ALIGNMENT)
TRACK 2 (EXISTING ALIGNMENT)

PLAN DEVELOPED BY _____ DRAFTED BY _____ CHECKED BY _____ FILE NAME = \$file\$

NOTES:

1. NOT ALL POTENTIAL PROPERTY ACQUISITIONS ARE LABELED. ONLY LOCATIONS DEEMED TO BE SIGNIFICANT ACQUISITIONS ARE SHOWN.

SYMBOLS:



- EXISTING STATION
PROPOSED STATION
WATER OBSTRUCTION
CP XX EXISTING CONTROL POINT
CP XX NEW CONTROL POINT
ROCK CUT

LEGEND:

- EXISTING TRACK
TRACK TO BE REMOVED
OTHER RAILROAD
EXISTING ACCESS ROAD
NEW/RELOCATED FREIGHT TRACK
NEW PASSENGER TRACK
NEW PASSENGER TRACK ON UPGRADED EXISTING TRACK
POTENTIAL ACCESS ROAD
NO-BUILD TRACK
XX MPH PROPOSED PASSENGER SPEED
XX MPH EXISTING PASSENGER SPEED
XX MPH EXISTING/PROPOSED FREIGHT SPEED



HNTB

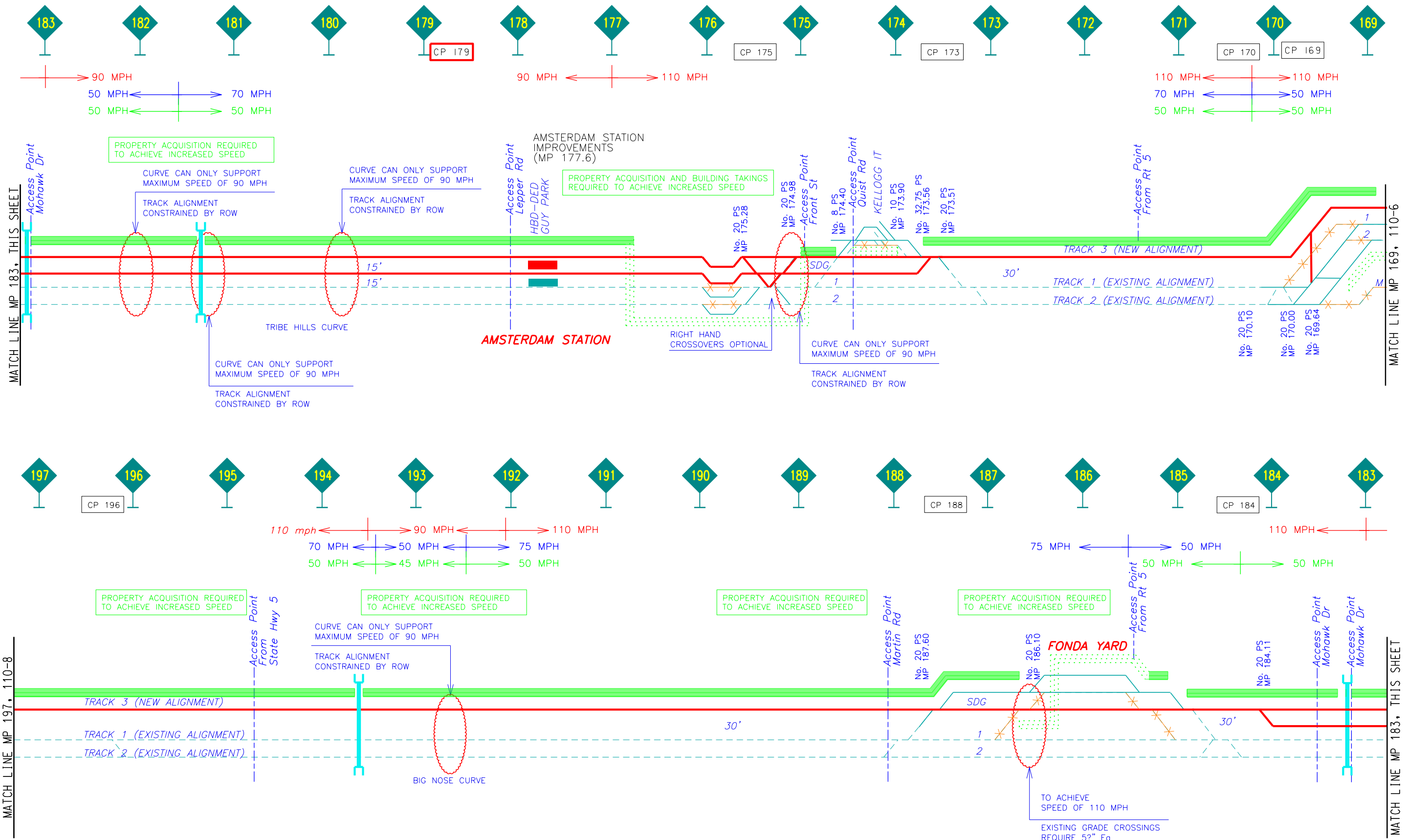
NYS DOT HIGH-SPEED INTERCITY PASSENGER RAIL
EMPIRE CORRIDOR, TIER 1 EIS

ALTERNATIVE 110
ENGINEERED TRACK SCHEMATICS

CONTRACT NUMBER

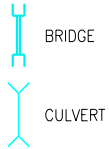
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DRAWING NO. 110-7
SHEET NO. 7
DATE: FEBRUARY, 2012



PLAN DEVELOPED BY _____ DRAFTED BY _____ CHECKED BY _____ FILE NAME = \$file\$

NOTES:
1. NOT ALL POTENTIAL PROPERTY ACQUISITIONS ARE LABELED. ONLY LOCATIONS DEEMED TO BE SIGNIFICANT ACQUISITIONS ARE SHOWN.



- SYMBOLS:
- EXISTING STATION
 - PROPOSED STATION
 - WATER OBSTRUCTION
 - CP XX EXISTING CONTROL POINT
 - CP XX NEW CONTROL POINT
 - ROCK CUT

- LEGEND:
- EXISTING TRACK
 - TRACK TO BE REMOVED
 - OTHER RAILROAD
 - EXISTING ACCESS ROAD
 - NEW/RELOCATED FREIGHT TRACK
 - NEW PASSENGER TRACK

- NEW PASSENGER TRACK ON UPGRADED EXISTING TRACK
- POTENTIAL ACCESS ROAD
- NO-BUILD TRACK
- XX MPH PROPOSED PASSENGER SPEED
- XX MPH EXISTING PASSENGER SPEED
- XX MPH EXISTING/PROPOSED FREIGHT SPEED



HNTB

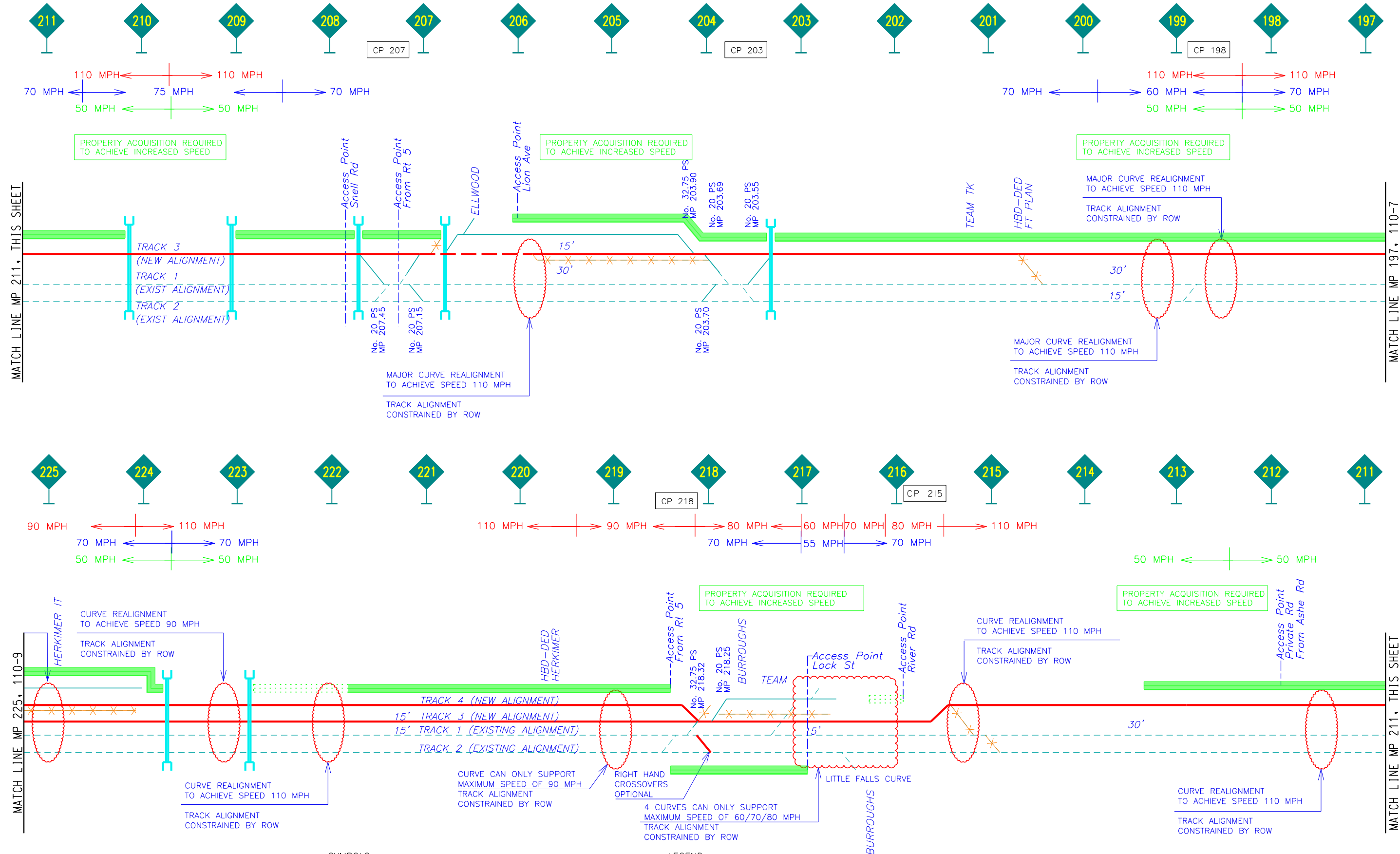
NYS DOT HIGH-SPEED INTERCITY PASSENGER RAIL
EMPIRE CORRIDOR, TIER 1 EIS

ALTERNATIVE 110
ENGINEERED TRACK SCHEMATICS

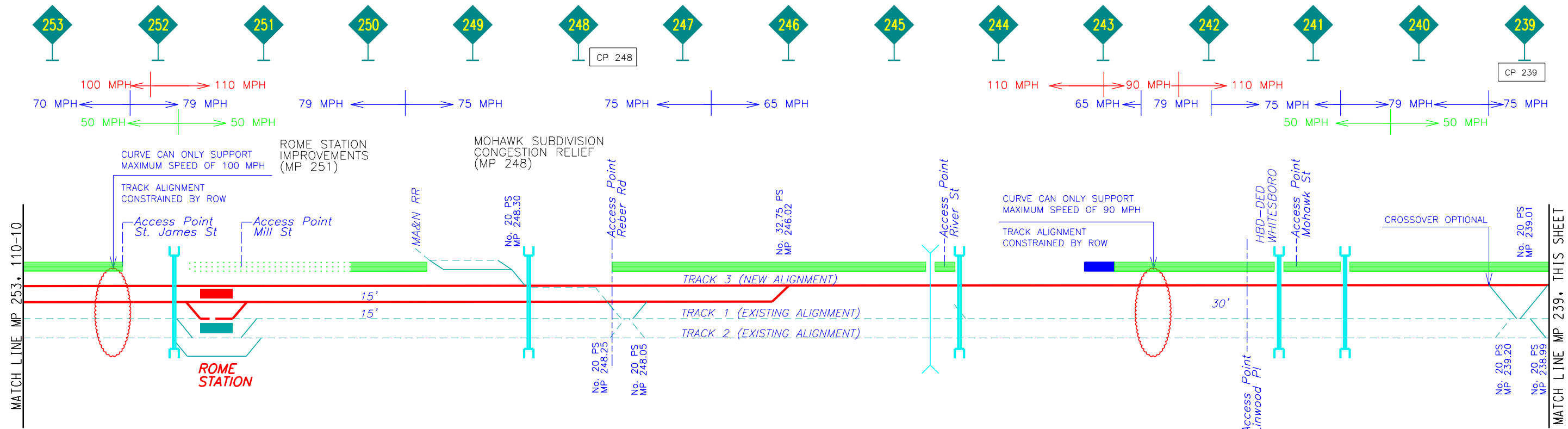
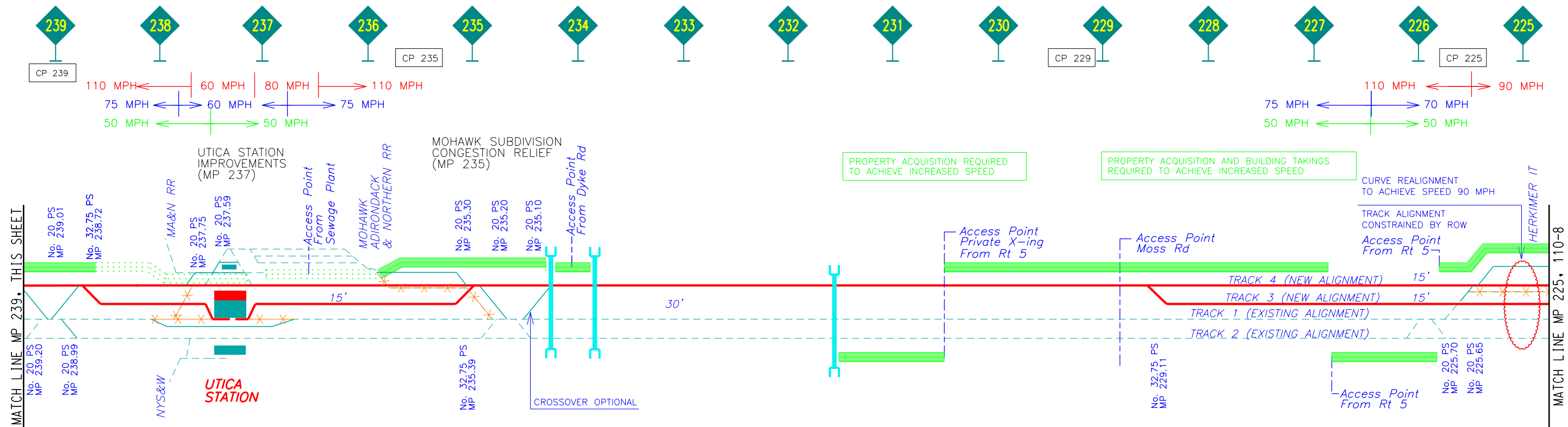
CONTRACT NUMBER

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DRAWING NO. 110-8
SHEET NO. 8
DATE: FEBRUARY, 2012



PLAN DEVELOPED BY _____ DRAFTED BY _____ CHECKED BY _____ FILE NAME = \$file\$




SYMBOLS:

- BRIDGE
- CULVERT
- EXISTING STATION
- PROPOSED STATION
- WATER OBSTRUCTION
- CP XX EXISTING CONTROL POINT
- CP XX NEW CONTROL POINT
- ROCK CUT

LEGEND:


- EXISTING TRACK
- TRACK TO BE REMOVED
- OTHER RAILROAD
- EXISTING ACCESS ROAD
- NEW/RELOCATED FREIGHT TRACK
- NEW PASSENGER TRACK
- NEW PASSENGER TRACK ON UPGRADED EXISTING TRACK
- POTENTIAL ACCESS ROAD
- NO-BUILD TRACK
- XX MPH PROPOSED PASSENGER SPEED
- XX MPH EXISTING PASSENGER SPEED
- XX MPH EXISTING/PROPOSED FREIGHT SPEED

NOTES:
1. NOT ALL POTENTIAL PROPERTY ACQUISITIONS ARE LABELED. ONLY LOCATIONS DEEMED TO BE SIGNIFICANT ACQUISITIONS ARE SHOWN.



NYS DOT HIGH-SPEED INTERCITY PASSENGER RAIL
EMPIRE CORRIDOR, TIER 1 EIS

ALTERNATIVE 110
ENGINEERED TRACK SCHEMATICS

CONTRACT NUMBER	
XXXXXXXXXX	
DRAWING NO. 110-9 SHEET NO. 9 DATE: FEBRUARY, 2012	

NOTES:
1. NOT ALL POTENTIAL PROPERTY ACQUISITIONS ARE LABELED. ONLY LOCATIONS DEEMED TO BE SIGNIFICANT ACQUISITIONS ARE SHOWN.

SYMBOLS:

BRIDGE

CULVERT

EXISTING STATION

PROPOSED STATION

WATER OBSTRUCTION

CP XX EXISTING CONTROL POINT

CP XX NEW CONTROL POINT

ROCK CUT

LEGEND:

EXISTING TRACK

TRACK TO BE REMOVED

OTHER RAILROAD

EXISTING ACCESS ROAD

NEW/RELOCATED FREIGHT TRACK

NEW PASSENGER TRACK

NEW PASSENGER TRACK ON UPGRADED EXISTING TRACK

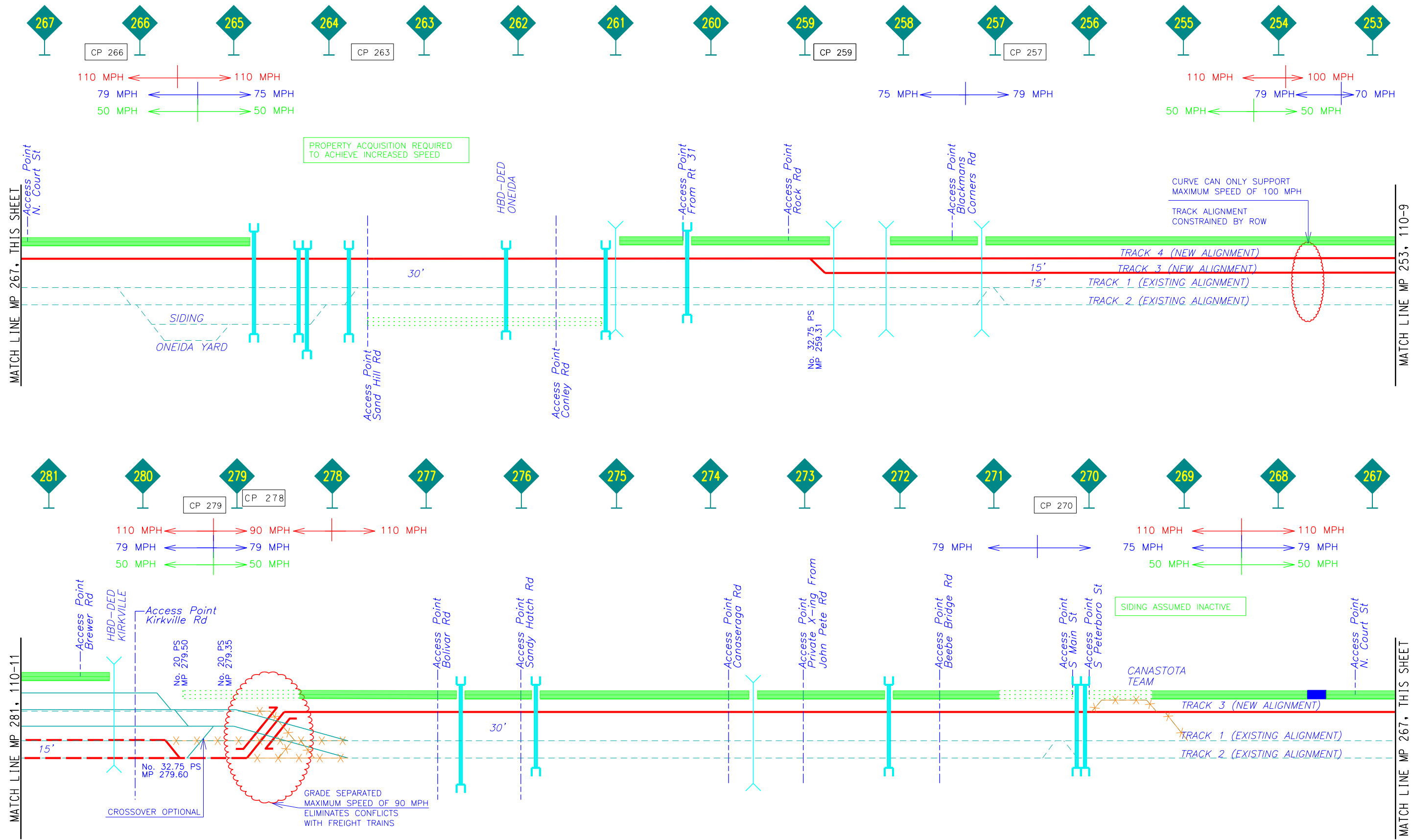
POTENTIAL ACCESS ROAD

NO-BUILD TRACK

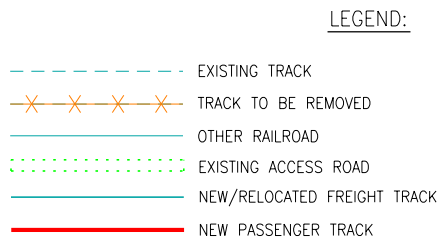
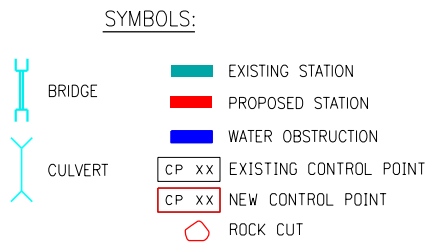
XX MPH PROPOSED PASSENGER SPEED

XX MPH EXISTING PASSENGER SPEED

XX MPH EXISTING/PROPOSED FREIGHT SPEED



NOTES:
1. NOT ALL POTENTIAL PROPERTY ACQUISITIONS ARE LABELED. ONLY LOCATIONS DEEMED TO BE SIGNIFICANT ACQUISITIONS ARE SHOWN.



HNTB

NYS DOT HIGH-SPEED INTERCITY PASSENGER RAIL
EMPIRE CORRIDOR, TIER 1 EIS

ALTERNATIVE 110
ENGINEERED TRACK SCHEMATICS

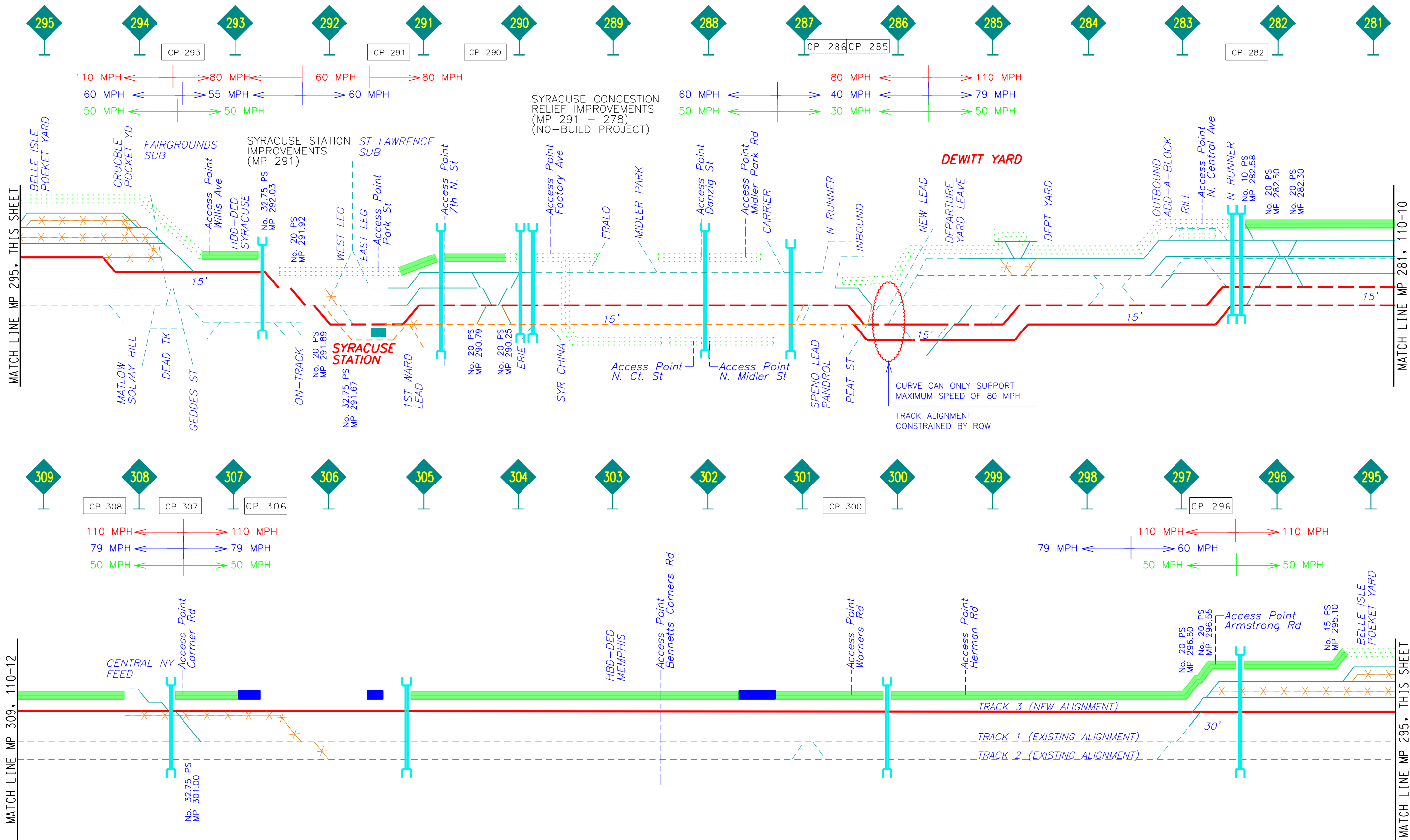
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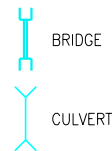
SHEET NO. 11

DATE: FEBRUARY, 2012



PLAN DEVELOPED BY _____ DRAFTED BY _____ CHECKED BY _____ FILE NAME = \$file\$

NOTES:
1. NOT ALL POTENTIAL PROPERTY ACQUISITIONS ARE LABELED. ONLY LOCATIONS DEEMED TO BE SIGNIFICANT ACQUISITIONS ARE SHOWN.



EXISTING STATION
PROPOSED STATION
WATER OBSTRUCTION
CP XX EXISTING CONTROL POINT
CP XX NEW CONTROL POINT
ROCK CUT

EXISTING TRACK
TRACK TO BE REMOVED
OTHER RAILROAD
EXISTING ACCESS ROAD
NEW/RELOCATED FREIGHT TRACK
NEW PASSENGER TRACK

LEGEND:

NEW PASSENGER TRACK ON UPGRADED EXISTING TRACK
POTENTIAL ACCESS ROAD
NO-BUILD TRACK
XX MPH PROPOSED PASSENGER SPEED
XX MPH EXISTING PASSENGER SPEED
XX MPH EXISTING/PROPOSED FREIGHT SPEED



HNTB

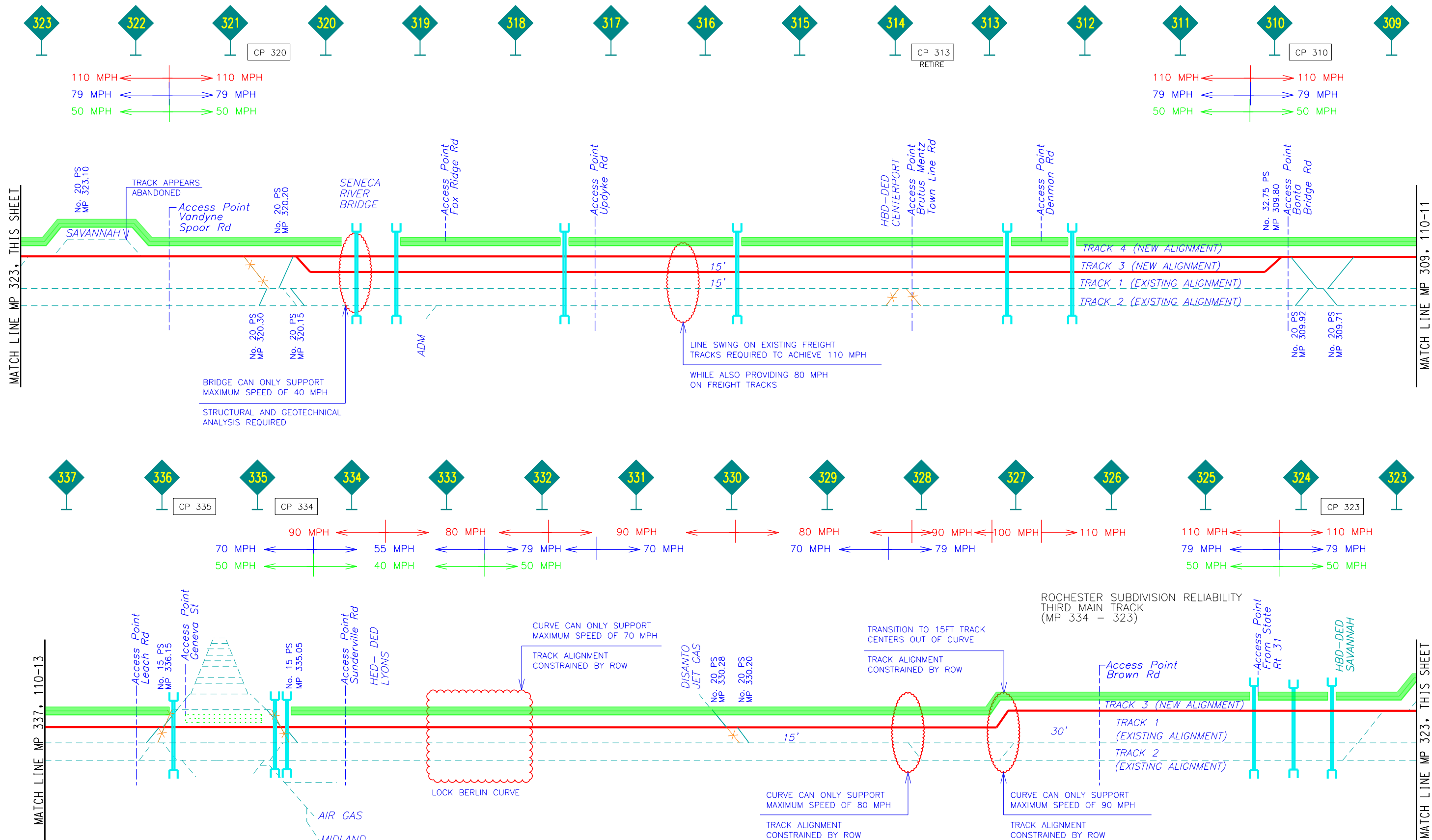
NYS DOT HIGH-SPEED INTERCITY PASSENGER RAIL
EMPIRE CORRIDOR, TIER 1 EIS

ALTERNATIVE 110
ENGINEERED TRACK SCHEMATICS

CONTRACT NUMBER

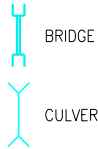
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DRAWING NO. 110-12
SHEET NO. 12
DATE: APRIL, 2012



PLAN DEVELOPED BY _____ DRAFTED BY _____ CHECKED BY _____ FILE NAME = \$file\$

NOTES:
1. NOT ALL POTENTIAL PROPERTY ACQUISITIONS ARE LABELED. ONLY LOCATIONS DEEMED TO BE SIGNIFICANT ACQUISITIONS ARE SHOWN.



SYMBOLS:
EXISTING STATION
PROPOSED STATION
WATER OBSTRUCTION
CP XX EXISTING CONTROL POINT
CP XX NEW CONTROL POINT
ROCK CUT

LEGEND:
EXISTING TRACK
TRACK TO BE REMOVED
OTHER RAILROAD
EXISTING ACCESS ROAD
NEW/RELOCATED FREIGHT TRACK
NEW PASSENGER TRACK

NEW PASSENGER TRACK ON UPGRADED EXISTING TRACK
POTENTIAL ACCESS ROAD
NO-BUILD TRACK
XX MPH PROPOSED PASSENGER SPEED
XX MPH EXISTING PASSENGER SPEED
XX MPH EXISTING/PROPOSED FREIGHT SPEED

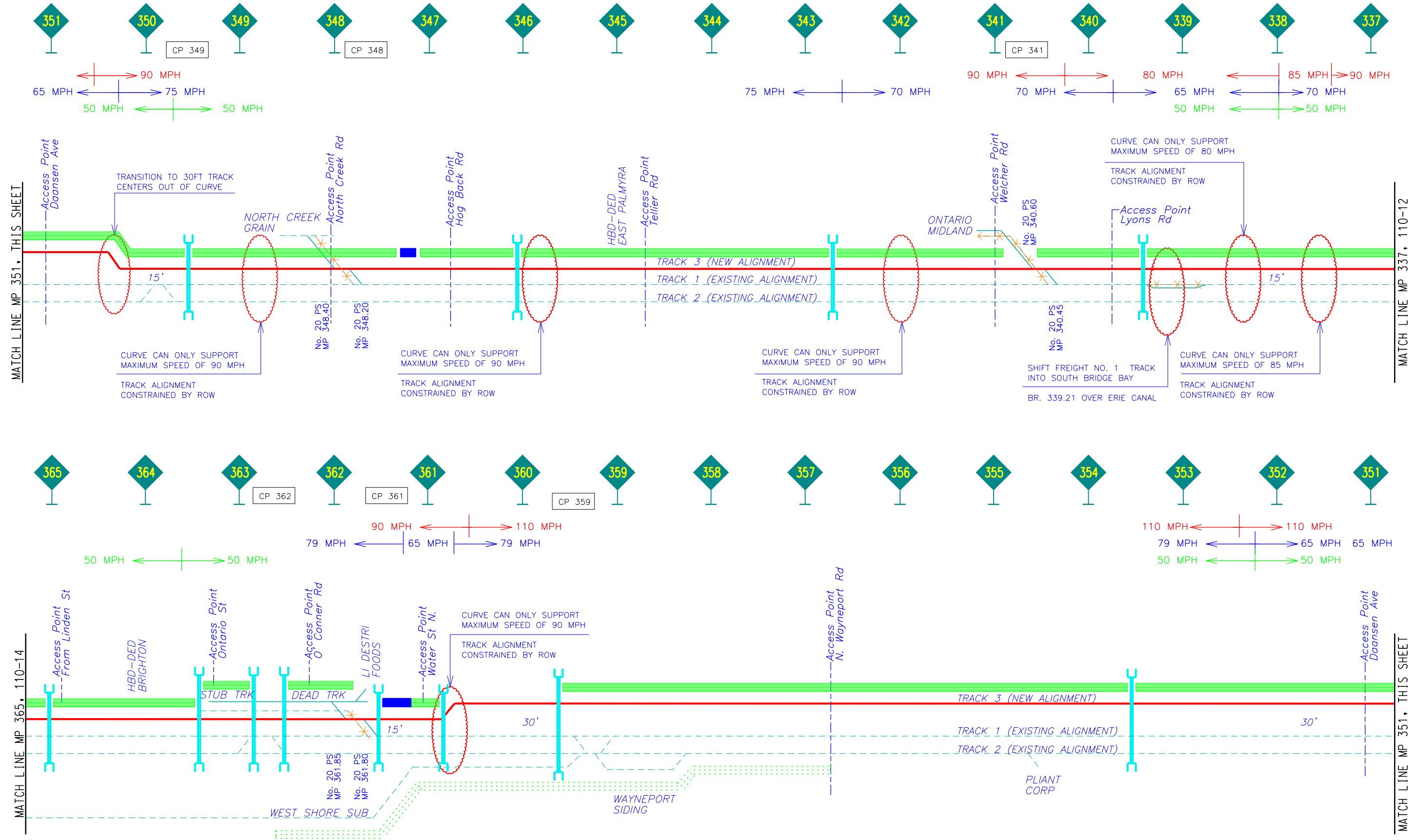


HNTB

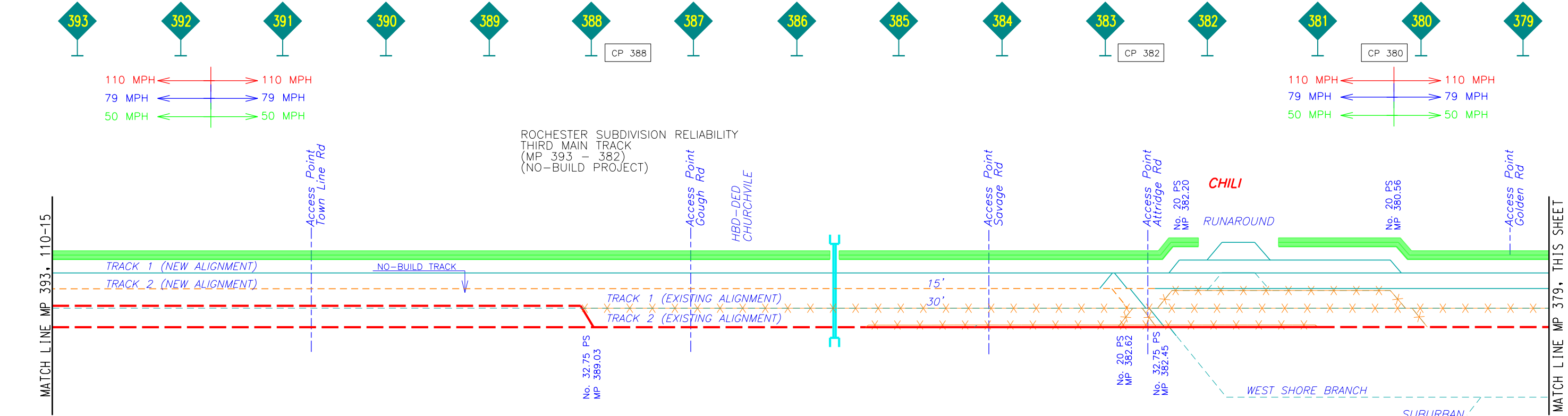
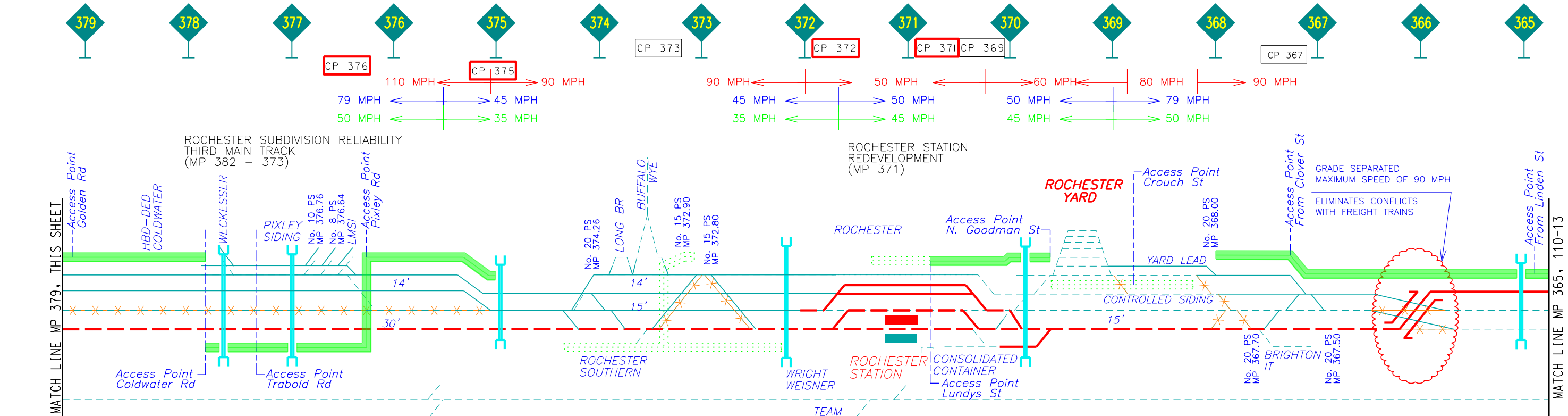
NYS DOT HIGH-SPEED INTERCITY PASSENGER RAIL
EMPIRE CORRIDOR, TIER 1 EIS

ALTERNATIVE 110
ENGINEERED TRACK SCHEMATICS

CONTRACT NUMBER
XXXXXXXXXX
DRAWING NO. 110-13
SHEET NO. 13
DATE: FEBRUARY, 2012



PLAN DEVELOPED BY _____ DRAFTED BY _____ CHECKED BY _____ FILE NAME = \$file\$



SYMBOLS:

- BRIDGE
- CULVERT
- EXISTING STATION
- PROPOSED STATION
- WATER OBSTRUCTION
- CP XX EXISTING CONTROL POINT
- CP XX NEW CONTROL POINT
- ROCK CUT

LEGEND:

- EXISTING TRACK
- TRACK TO BE REMOVED
- OTHER RAILROAD
- EXISTING ACCESS ROAD
- NEW/RELOCATED FREIGHT TRACK
- NEW PASSENGER TRACK
- NEW PASSENGER TRACK ON UPGRADED EXISTING TRACK
- POTENTIAL ACCESS ROAD
- NO-BUILD TRACK
- XX MPH PROPOSED PASSENGER SPEED
- XX MPH EXISTING PASSENGER SPEED
- XX MPH EXISTING/PROPOSED FREIGHT SPEED

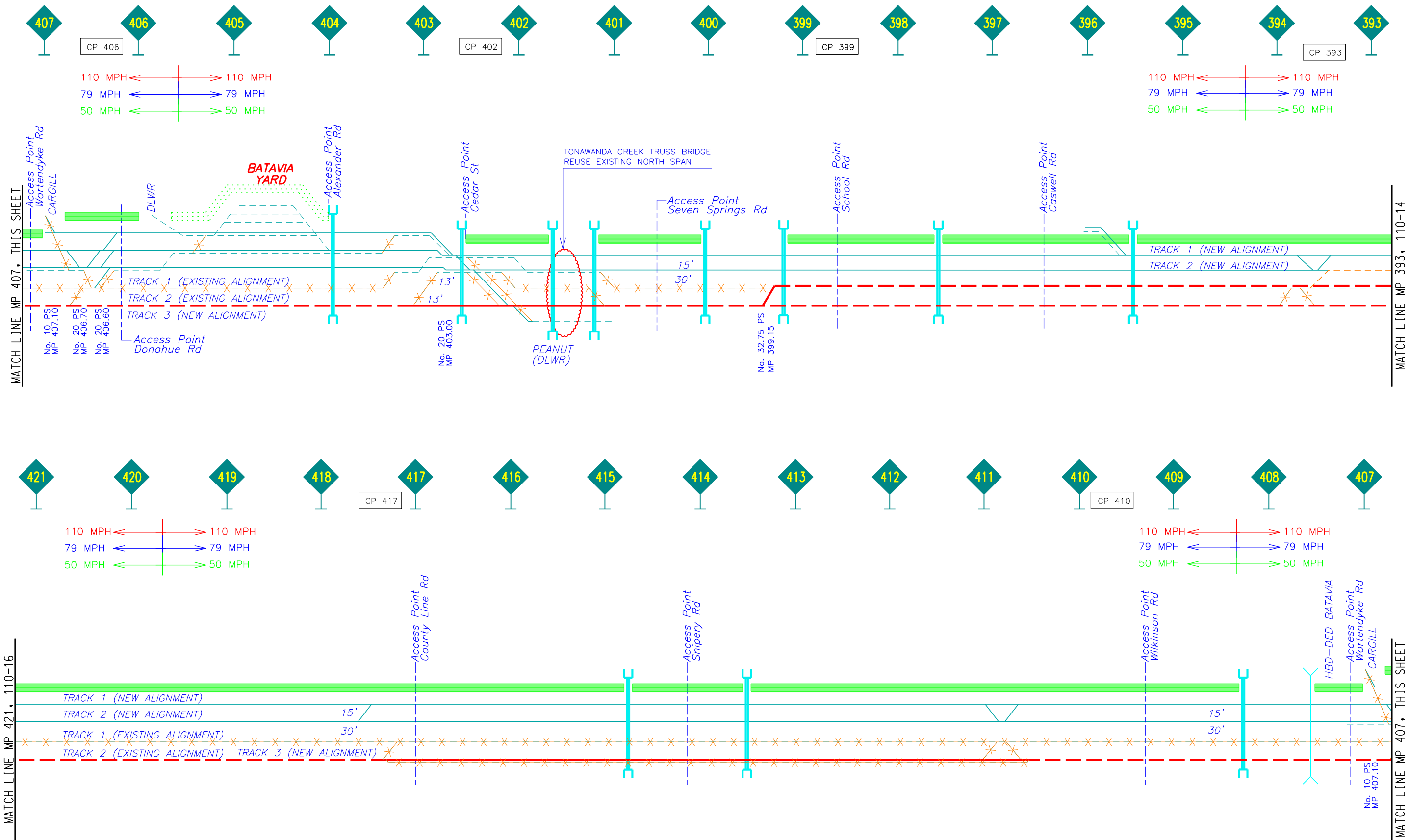
NOTES:
1. NOT ALL POTENTIAL PROPERTY ACQUISITIONS ARE LABELED. ONLY LOCATIONS DEEMED TO BE SIGNIFICANT ACQUISITIONS ARE SHOWN.



HNTB

NYSDOT HIGH-SPEED INTERCITY PASSENGER RAIL EMPIRE CORRIDOR, TIER 1 EIS	CONTRACT NUMBER	
	XXXXXXXXXX	
ALTERNATIVE 110 ENGINEERED TRACK SCHEMATICS		DRAWING NO. 110-14 SHEET NO. 14 DATE: FEBRUARY, 2012

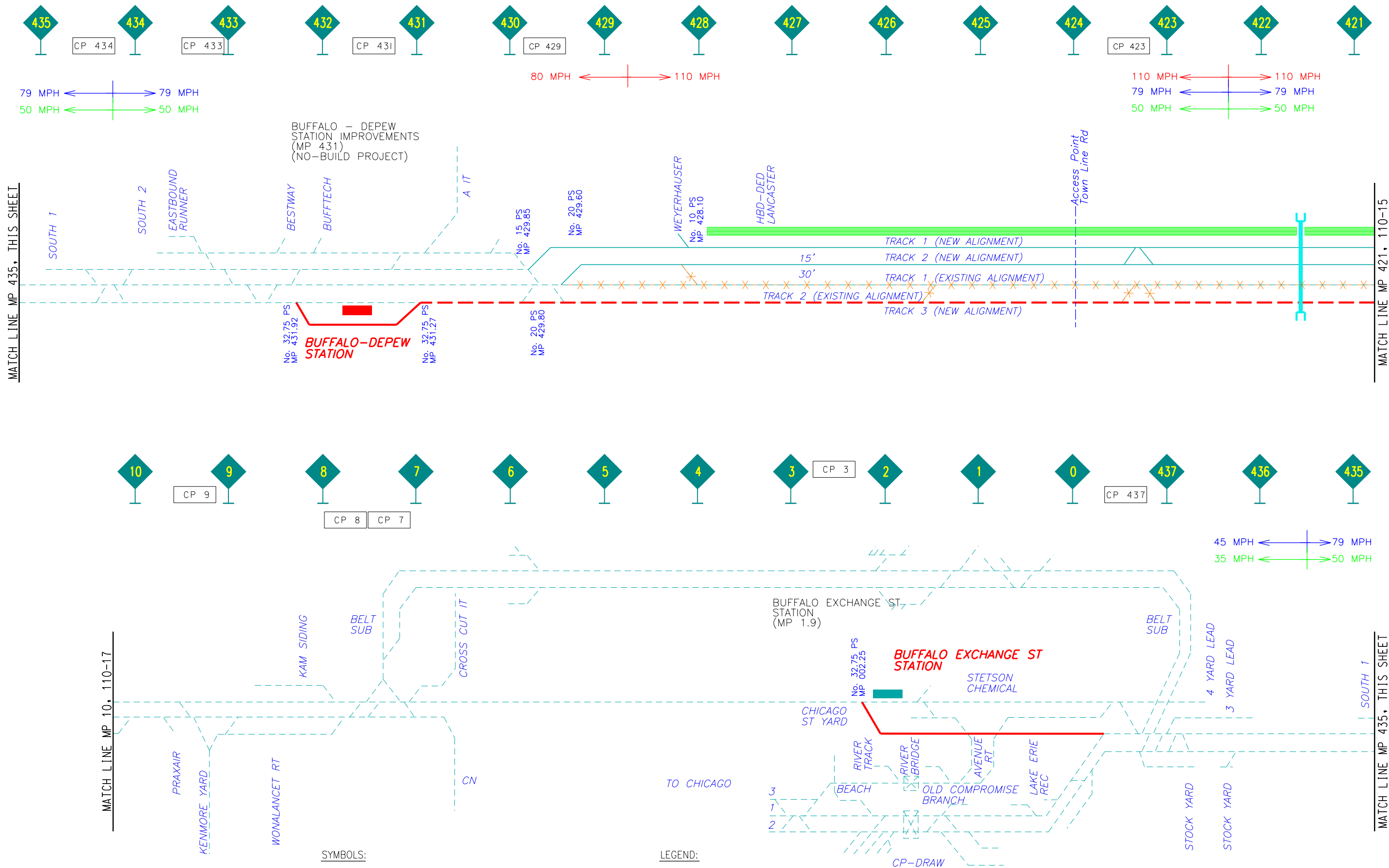
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NOTES:
1. NOT ALL POTENTIAL PROPERTY ACQUISITIONS ARE LABELED. ONLY LOCATIONS DEEMED TO BE SIGNIFICANT ACQUISITIONS ARE SHOWN.

SYMBOLS:		LEGEND:	
	BRIDGE		EXISTING TRACK
	CULVERT		TRACK TO BE REMOVED
	EXISTING STATION		OTHER RAILROAD
	PROPOSED STATION		EXISTING ACCESS ROAD
	WATER OBSTRUCTION		NEW/RELOCATED FREIGHT TRACK
	CP XX EXISTING CONTROL POINT		NEW PASSENGER TRACK
	CP XX NEW CONTROL POINT		NEW PASSENGER TRACK ON UPGRADED EXISTING TRACK
	ROCK CUT		POTENTIAL ACCESS ROAD
			NO-BUILD TRACK
			XX MPH PROPOSED PASSENGER SPEED
			XX MPH EXISTING PASSENGER SPEED
			XX MPH EXISTING/PROPOSED FREIGHT SPEED

NYSDOT HIGH-SPEED INTERCITY PASSENGER RAIL EMPIRE CORRIDOR, TIER 1 EIS	CONTRACT NUMBER	
	XXXXXXXXXX	
ALTERNATIVE 110 ENGINEERED TRACK SCHEMATICS		DRAWING NO. 110-15 SHEET NO. 15 DATE: FEBRUARY, 2012



NOTES:
1. NOT ALL POTENTIAL PROPERTY ACQUISITIONS ARE LABELED. ONLY LOCATIONS DEEMED TO BE SIGNIFICANT ACQUISITIONS ARE SHOWN.

SYMBOLS:

- BRIDGE
- CULVERT
- EXISTING STATION
- PROPOSED STATION
- WATER OBSTRUCTION
- CP XX EXISTING CONTROL POINT
- CP XX NEW CONTROL POINT
- ROCK CUT

LEGEND:

- EXISTING TRACK
- TRACK TO BE REMOVED
- OTHER RAILROAD
- EXISTING ACCESS ROAD
- NEW/RELOCATED FREIGHT TRACK
- NEW PASSENGER TRACK
- NEW PASSENGER TRACK ON UPGRADED EXISTING TRACK
- POTENTIAL ACCESS ROAD
- NO-BUILD TRACK
- XX MPH PROPOSED PASSENGER SPEED
- XX MPH EXISTING PASSENGER SPEED
- XX MPH EXISTING/PROPOSED FREIGHT SPEED



HNTB

NYS DOT HIGH-SPEED INTERCITY PASSENGER RAIL
EMPIRE CORRIDOR, TIER 1 EIS

ALTERNATIVE 110
ENGINEERED TRACK SCHEMATICS

CONTRACT NUMBER

XXXXXXXXXX

DRAWING NO. 110-16


SHEET NO. 16


DATE: FEBRUARY, 2012


MATCH LINE MP 24, THIS SHEET


MATCH LINE MP 10, 110-16


NOTES:
1. NOT ALL POTENTIAL PROPERTY ACQUISITIONS ARE LABELED. ONLY LOCATIONS DEEMED TO BE SIGNIFICANT ACQUISITIONS ARE SHOWN.


BRIDGE


CULVERT


EXISTING STATION


PROPOSED STATION



WATER OBSTRUCTION


CP XX


EXISTING CONTROL POINT


CP XX


NEW CONTROL POINT



ROCK CUT



EXISTING TRACK



TRACK TO BE REMOVED



OTHER RAILROAD



EXISTING ACCESS ROAD



NEW/RELOCATED FREIGHT TRACK



NEW PASSENGER TRACK



NEW PASSENGER TRACK ON
UPGRADED EXISTING TRACK


POTENTIAL ACCESS ROAD


NO-BUILD TRACK


XX MPH PROPOSED PASSENGER SPEED


XX MPH EXISTING PASSENGER SPEED


XX MPH EXISTING/PROPOSED FREIGHT SPEED

NIAGARA FALLS STATION
NEW INTERMODAL TRANSPORTATION CENTER
(MP 28)
(NO-BUILD PROJECT)

NIAGARA FALLS MAINTENANCE
FACILITY / YARD IMPROVEMENTS
(MP 27 - 27)

NIAGARA FALLS
STATION

NIAGARA SUBDIVISION
NEW SIGNAL SYSTEM
(MP 28 - 8)

NIAGARA SUBDIVISION
DOUBLE TRACK
(MP 22 - 17)

NIAGARA SUBDIVISION GRADE
CROSSING IMPROVEMENTS
(MP 28 - 1)

HBD-DED WHEATFIELD

WURLITZER IT
LOCKPORT
RUNNER IT
ERIE IT

TONAWANDA IT

84 LUMBER
MARTIN FIREPROOFING

24

23

CP 22

22

CP 21

21

20

19

18

17

CP 17

16

15

14

13

12

11

10

28

CP 28

27

CP 27

26

25

CP 25

24



HNTB

NYSDOT HIGH-SPEED INTERCITY PASSENGER RAIL
EMPIRE CORRIDOR, TIER 1 EIS

ALTERNATIVE 110
ENGINEERED TRACK SCHEMATICS

CONTRACT NUMBER

XXXXXXXXXX

DRAWING NO. 110-17
SHEET NO. 17
DATE: FEBRUARY, 2012

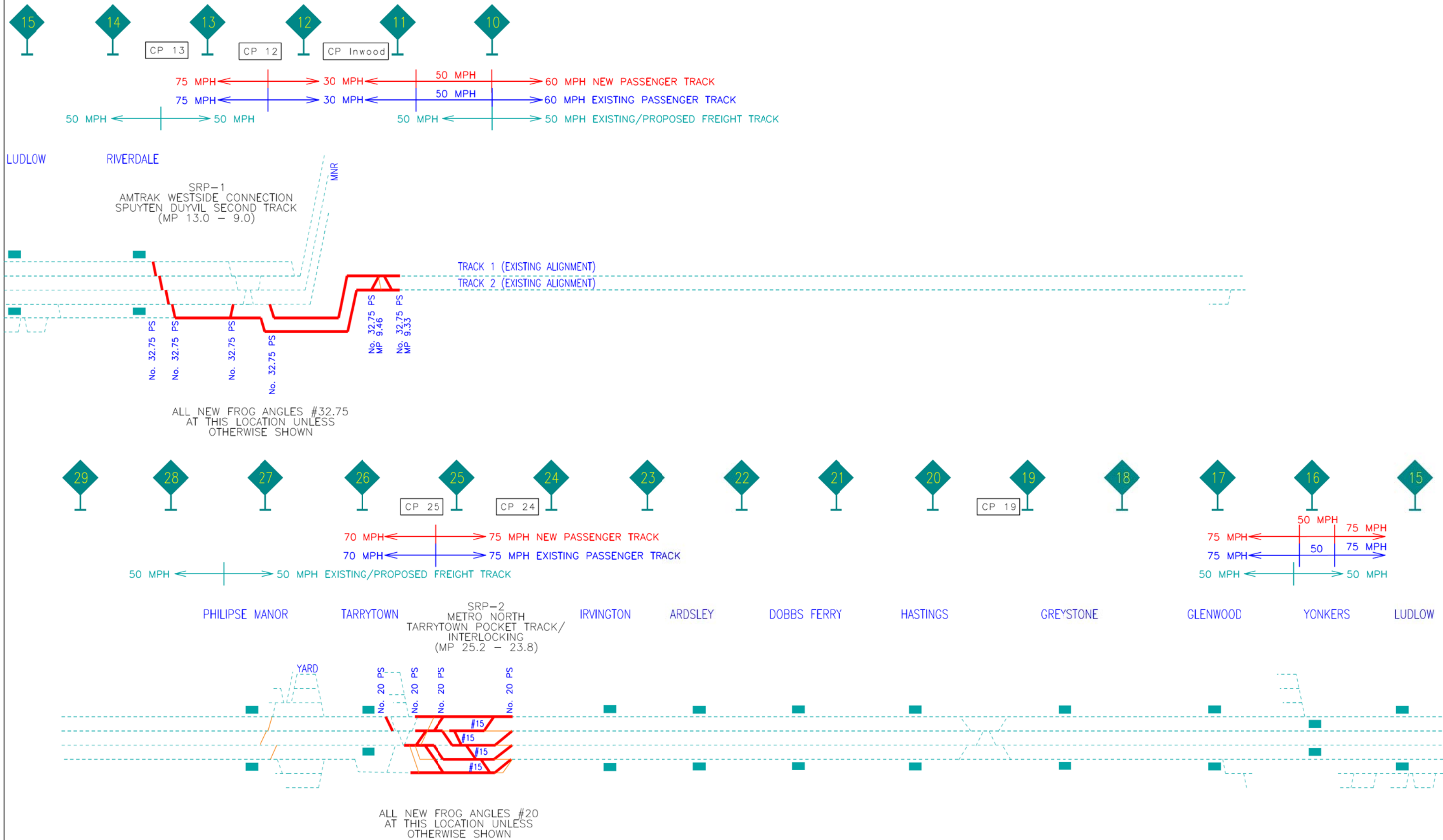


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Track Schematics for Alternative 125

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FILE NAME = JAB NY HSR Proposed 125mph_Track Schematic.dgn
CHECKED BY
DRAFTED BY
PLAN DEVELOPED BY



NOTE:
ALL CROSSINGS WILL BE GRADE SEPARATED
OR ELIMINATED FROM ALBANY TO BUFFALO

SYMBOLS:

- EXISTING STATION
- PROPOSED STATION
- JG BRIDGE

LEGEND:

- EXISTING TRACK
- ROADWAY
- WATERWAY
- TRACK TO BE REMOVED
- NEW PASSENGER TRACK
- INTERSTATE HIGHWAY
- NO BUILD PROJECT

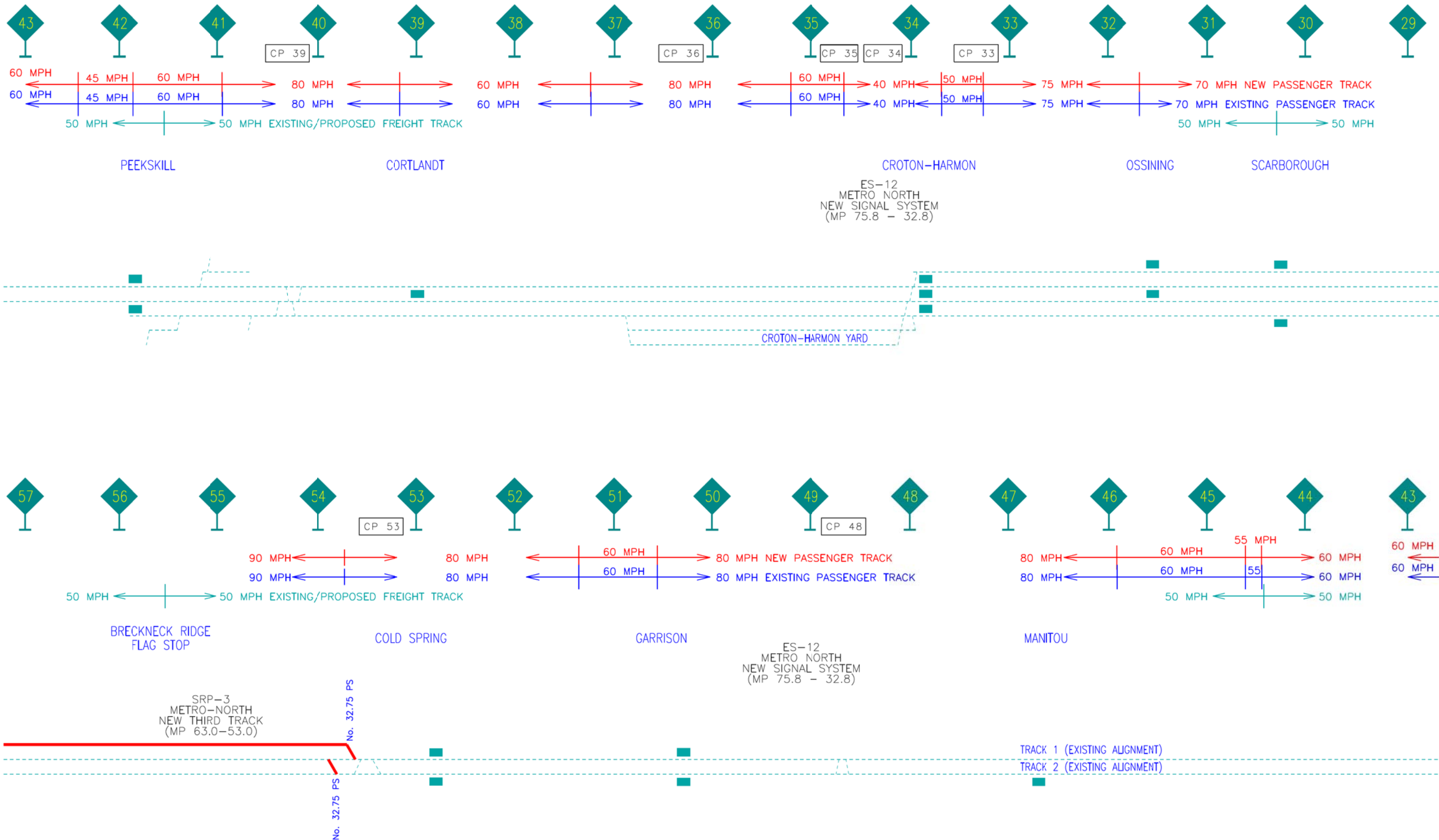


HNTB

NYSOT HIGH-SPEED INTERCITY PASSENGER RAIL
EMPIRE CORRIDOR, TIER 1 EIS
VERY HIGH SPEED TRACK ASSESSMENT
125 MPH ALTERNATIVE
ENGINEERED TRACK SCHEMATIC, SHEET 1 OF 16

CONTRACT NUMBER	XXXXXXXXXX
DRAWING NO.	N/A
SHEET NO.	N/A
DATE:	JUNE 14, 2012



FILE NAME = JAB NY HSR Proposed 125mph_Track Schematic.dgn
CHECKED BY
DRAFTED BY
PLAN DEVELOPED BY




NOTE:
ALL CROSSINGS WILL BE GRADE SEPARATED
OR ELIMINATED FROM ALBANY TO BUFFALO

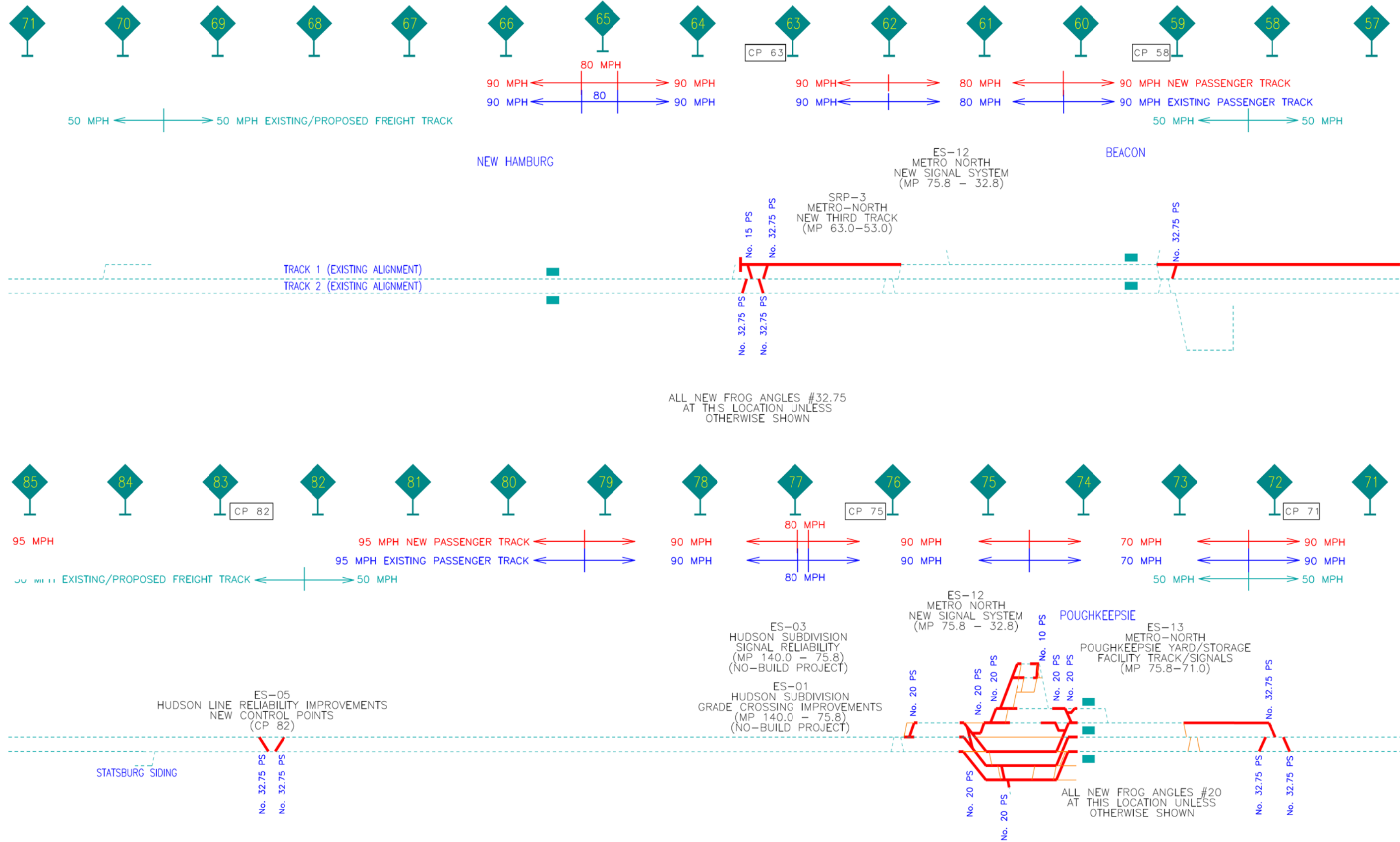
- SYMBOLS:**
- EXISTING STATION
 - PROPOSED STATION
 - JG BRIDGE

- LEGEND:**
- EXISTING TRACK
 - ROADWAY
 - WATERWAY
 - TRACK TO BE REMOVED
 - NEW PASSENGER TRACK
 - INTERSTATE HIGHWAY
 - NO BUILD PROJECT



NYSDOT HIGH-SPEED INTERCITY PASSENGER RAIL EMPIRE CORRIDOR, TIER 1 EIS	CONTRACT NUMBER	
	XXXXXXXXXX	
VERY HIGH SPEED TRACK ASSESSMENT 125 MPH ALTERNATIVE ENGINEERED TRACK SCHEMATIC, SHEET 2 OF 16	DRAWING NO. N/A SHEET NO. N/A DATE: JUNE 14, 2012	


FILE NAME = JAB NY HSR Proposed 125mph_Track Schematic.dgn
CHECKED BY
DRAFTED BY
PLAN DEVELOPED BY



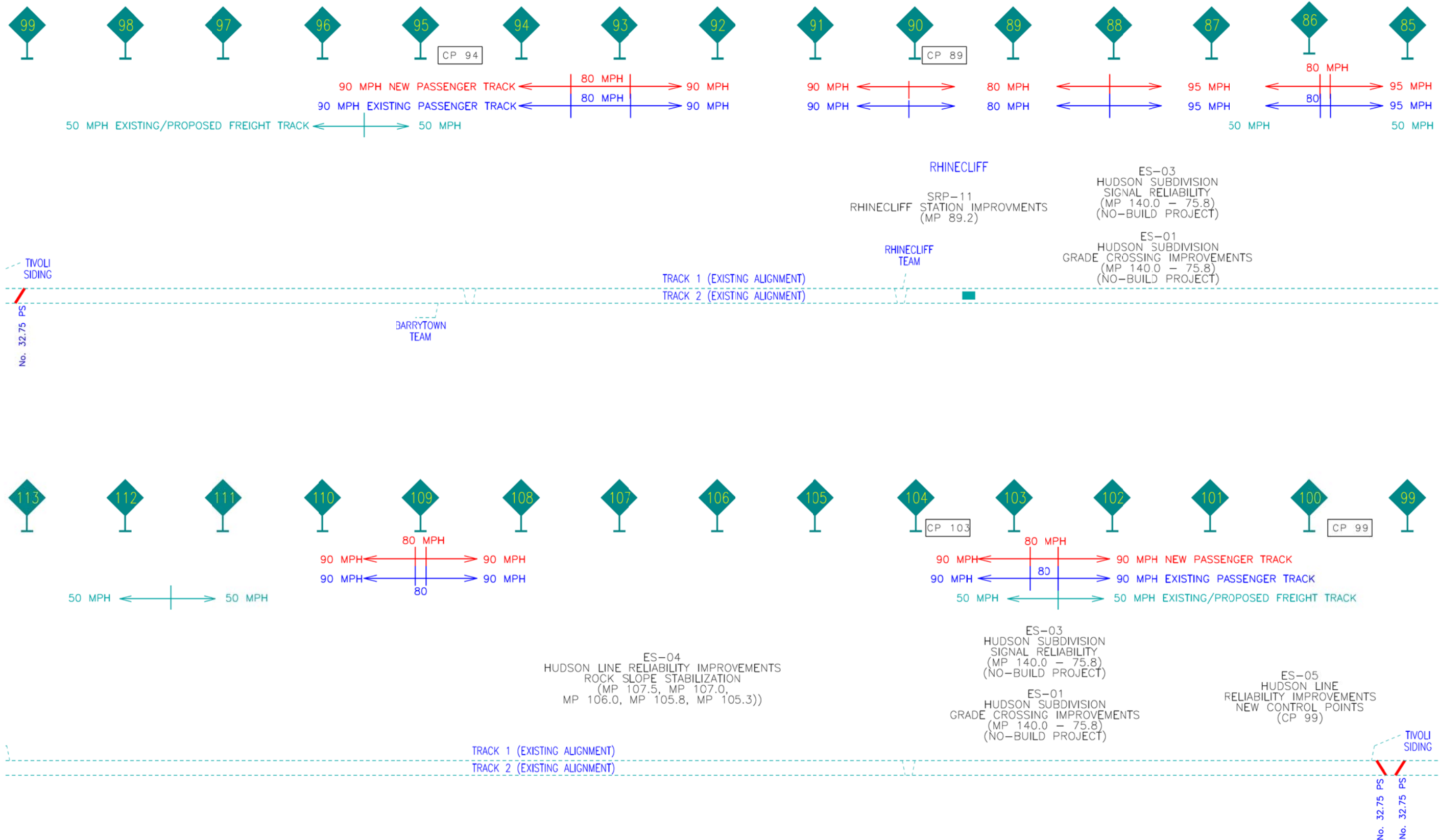
NOTE:
ALL CROSSINGS WILL BE GRADE SEPARATED
OR ELIMINATED FROM ALBANY TO BUFFALO

SYMBOLS:
[Green square] EXISTING STATION
[Red square] PROPOSED STATION
[Red double line] JG BRIDGE

LEGEND:
[Dashed blue line] EXISTING TRACK
[Dashed blue line] ROADWAY
[Solid blue line] WATERWAY
[Orange line] TRACK TO BE REMOVED
[Red line] NEW PASSENGER TRACK
[Green line] INTERSTATE HIGHWAY
[Dashed purple line] NO BUILD PROJECT

 HNTB	NYS DOT HIGH-SPEED INTERCITY PASSENGER RAIL EMPIRE CORRIDOR, TIER 1 EIS		CONTRACT NUMBER XXXXXXXXXX
	VERY HIGH SPEED TRACK ASSESSMENT 125 MPH ALTERNATIVE ENGINEERED TRACK SCHEMATIC, SHEET 3 OF 16		DRAWING NO. N/A SHEET NO. N/A DATE: JUNE 14, 2012

FILE NAME = JAB NY HSR Proposed 125mph_Track Schematic.dgn
CHECKED BY
DRAFTED BY
PLAN DEVELOPED BY




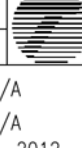
NOTE:
ALL CROSSINGS WILL BE GRADE SEPARATED
OR ELIMINATED FROM ALBANY TO BUFFALO

SYMBOLS:

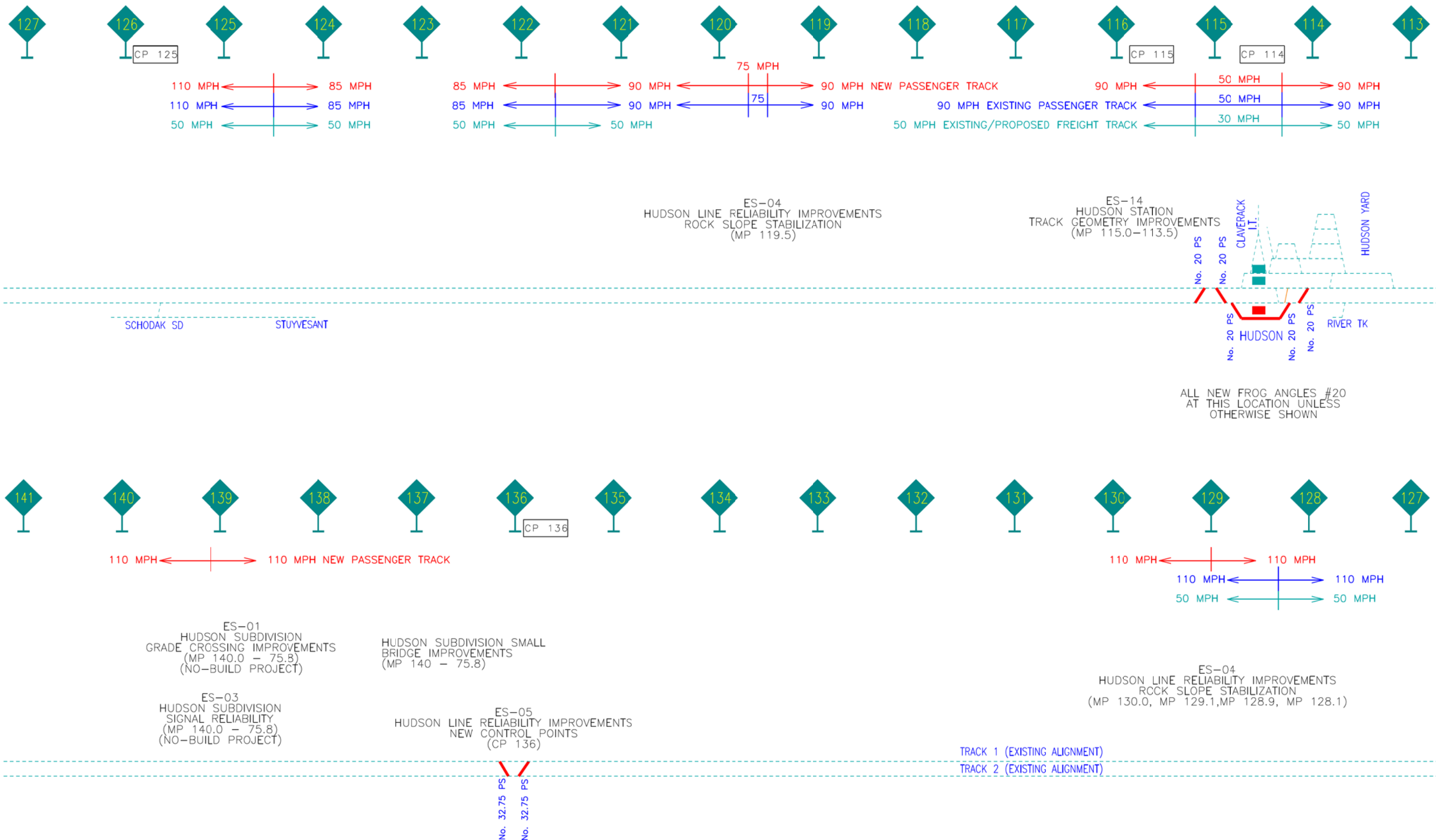
- EXISTING STATION
- PROPOSED STATION
- JG BRIDGE

LEGEND:

- EXISTING TRACK
- ROADWAY
- WATERWAY
- TRACK TO BE REMOVED
- NEW PASSENGER TRACK
- INTERSTATE HIGHWAY
- NO BUILD PROJECT

	NYSOT HIGH-SPEED INTERCITY PASSENGER RAIL EMPIRE CORRIDOR, TIER 1 EIS		CONTRACT NUMBER	
	VERY HIGH SPEED TRACK ASSESSMENT 125 MPH ALTERNATIVE ENGINEERED TRACK SCHEMATIC, SHEET 4 OF 16		XXXXXXXXXX	
		DRAWING NO.	N/A	
		SHEET NO.	N/A	
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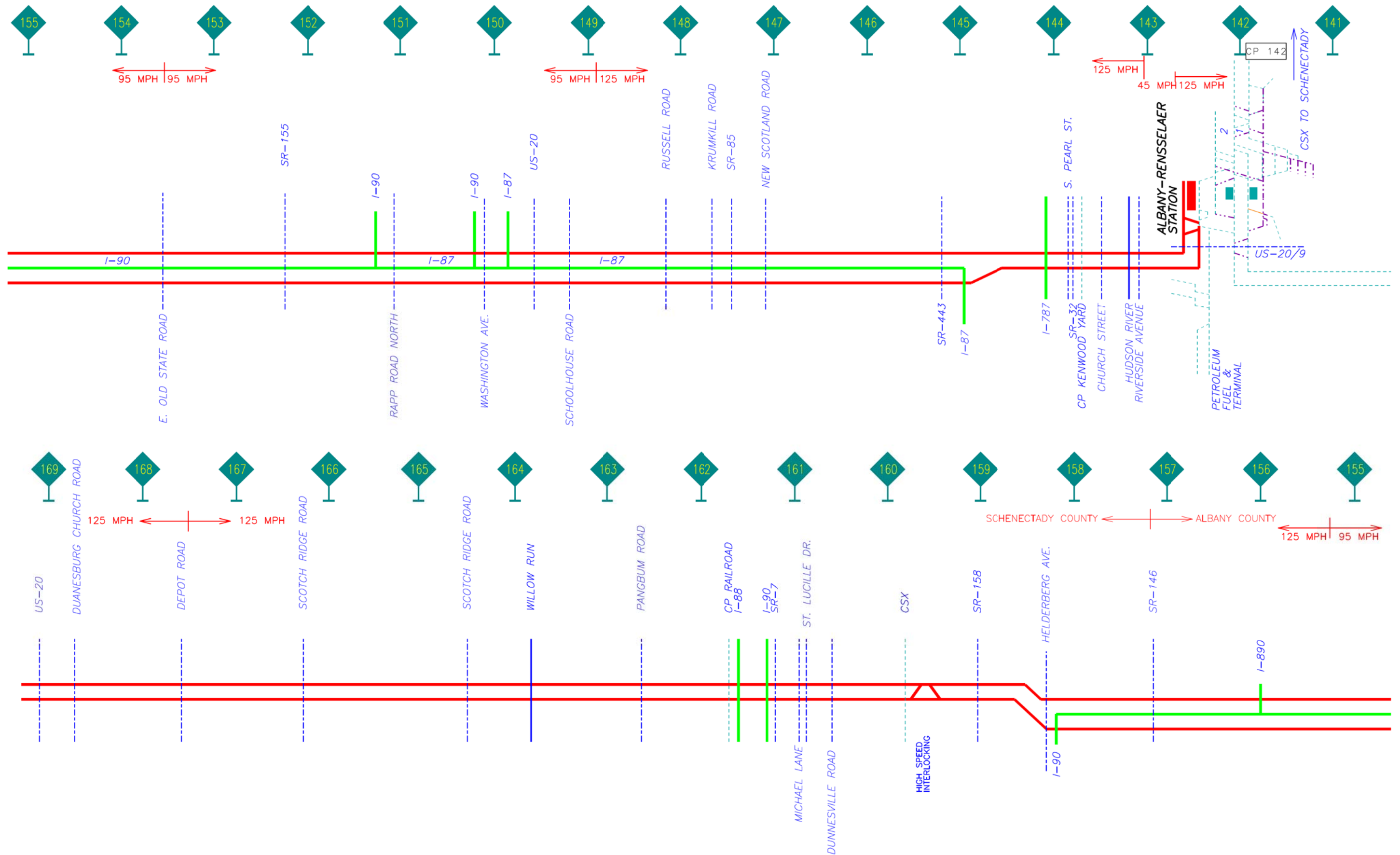
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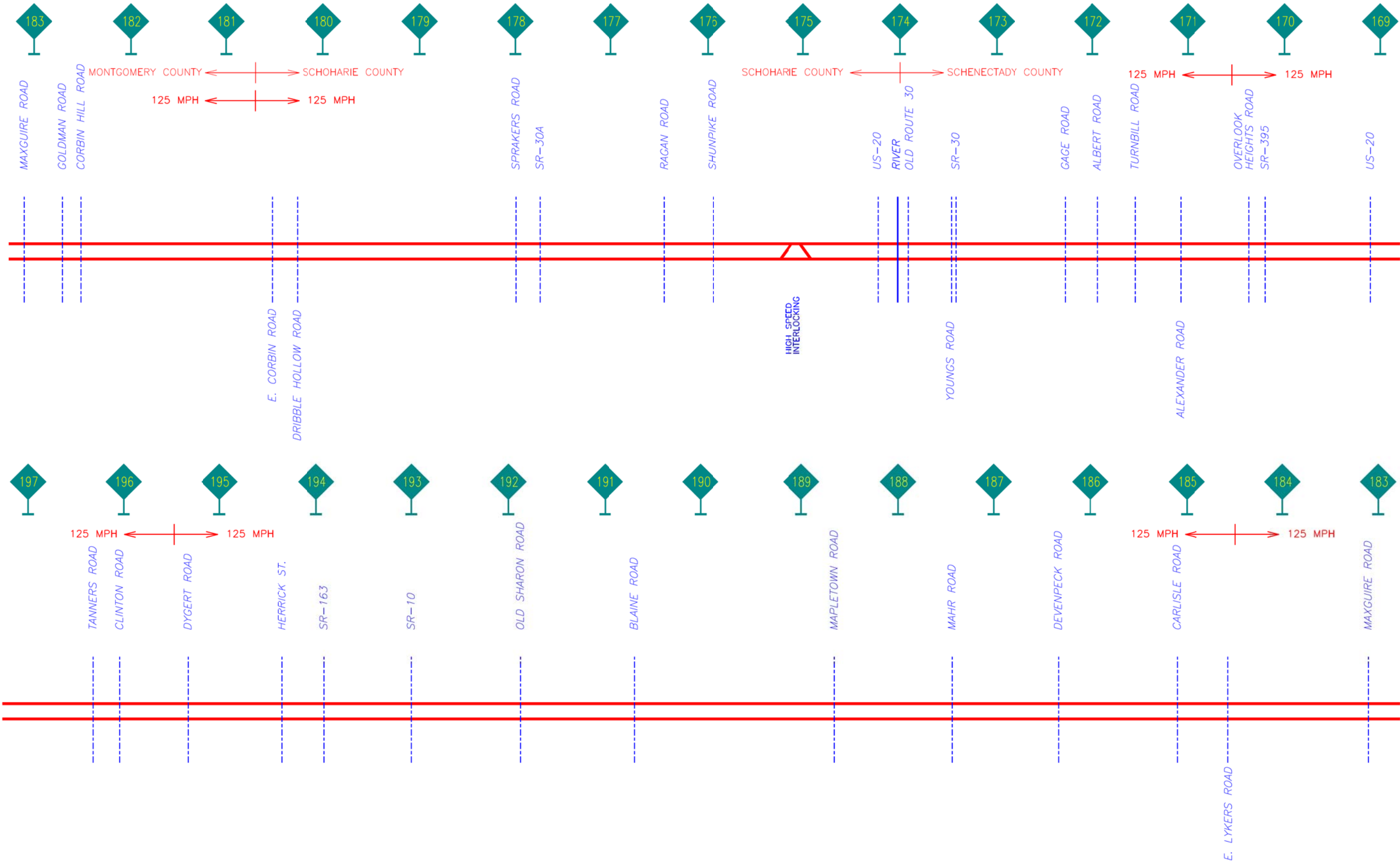
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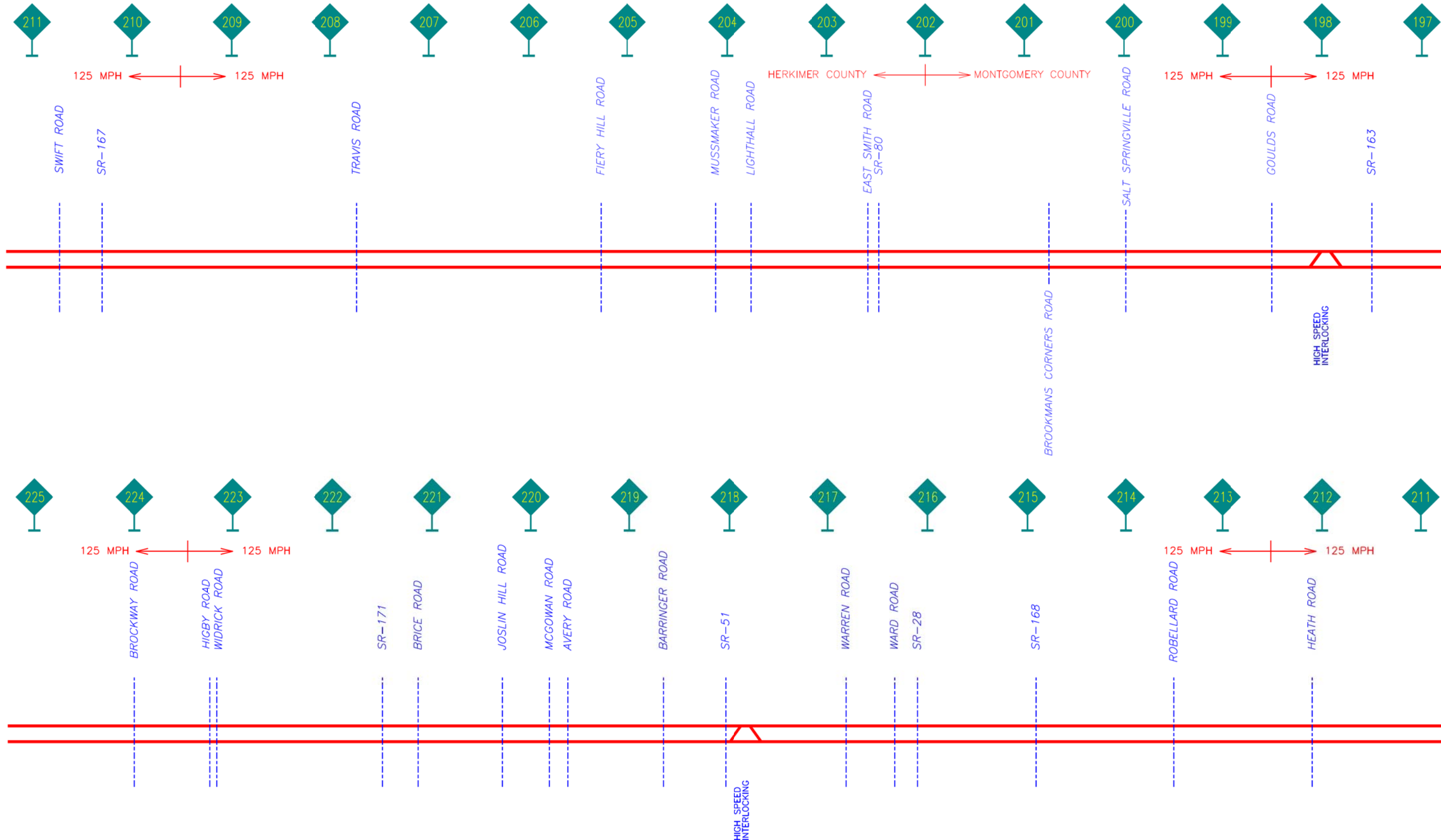
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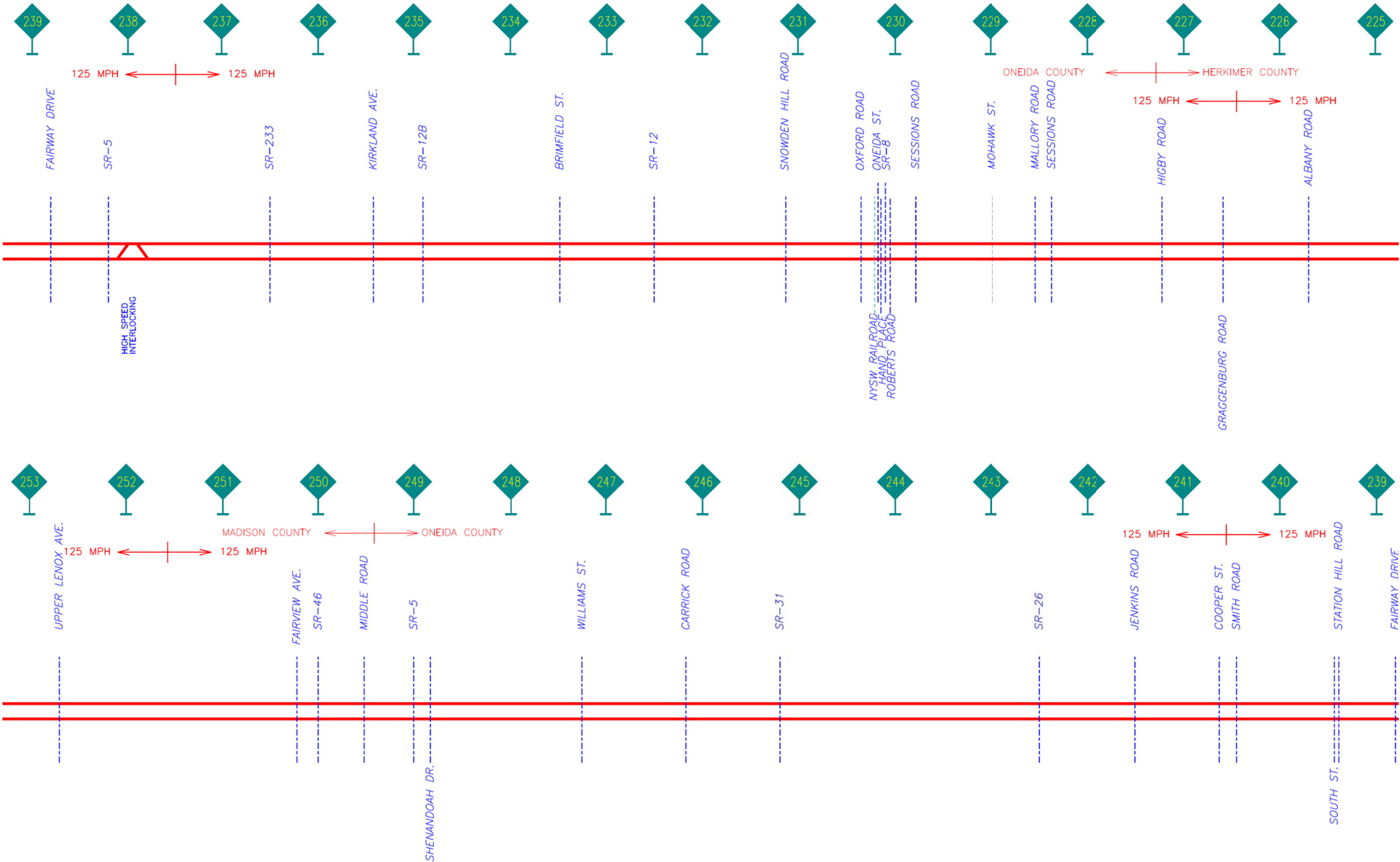
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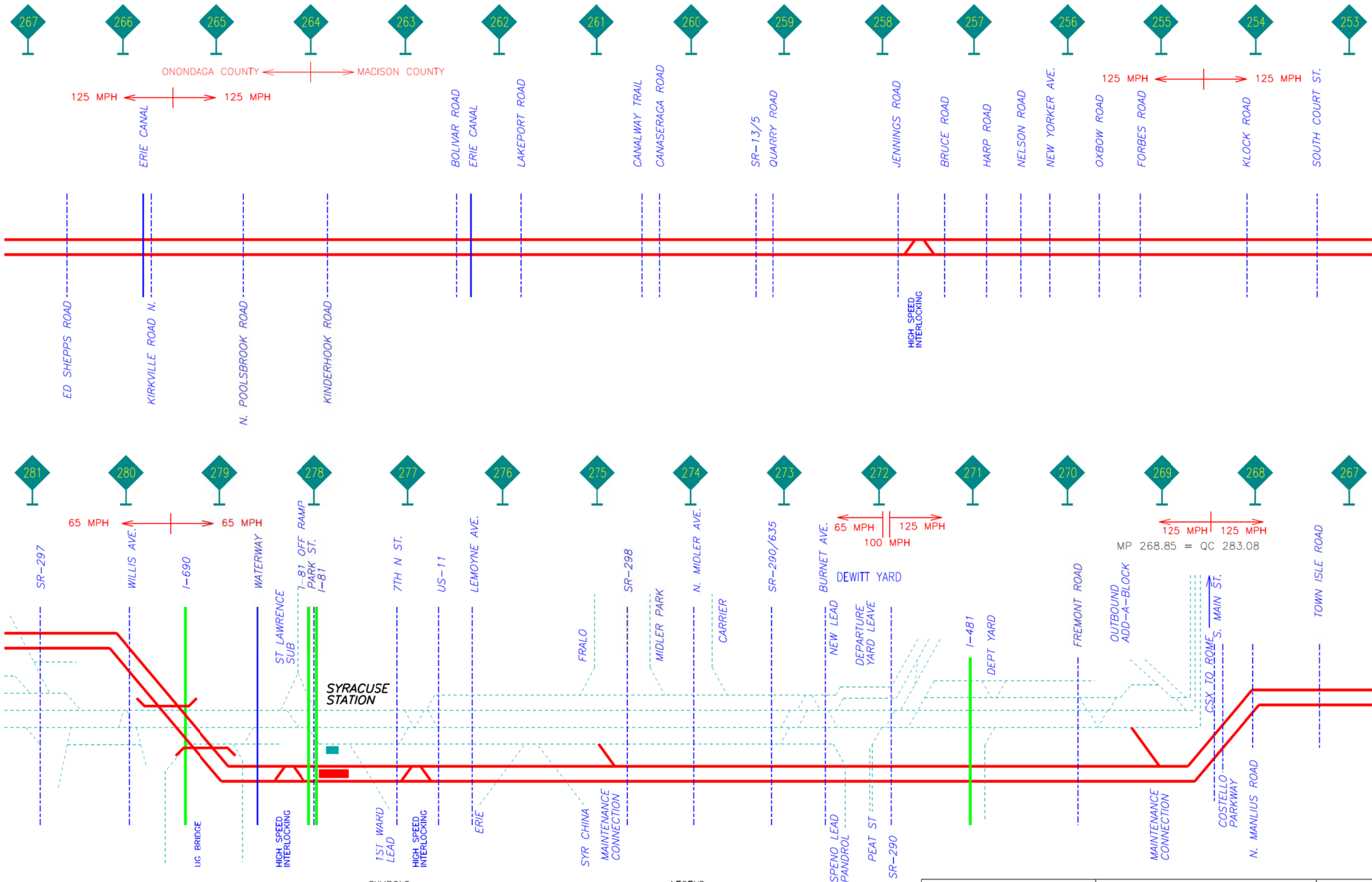
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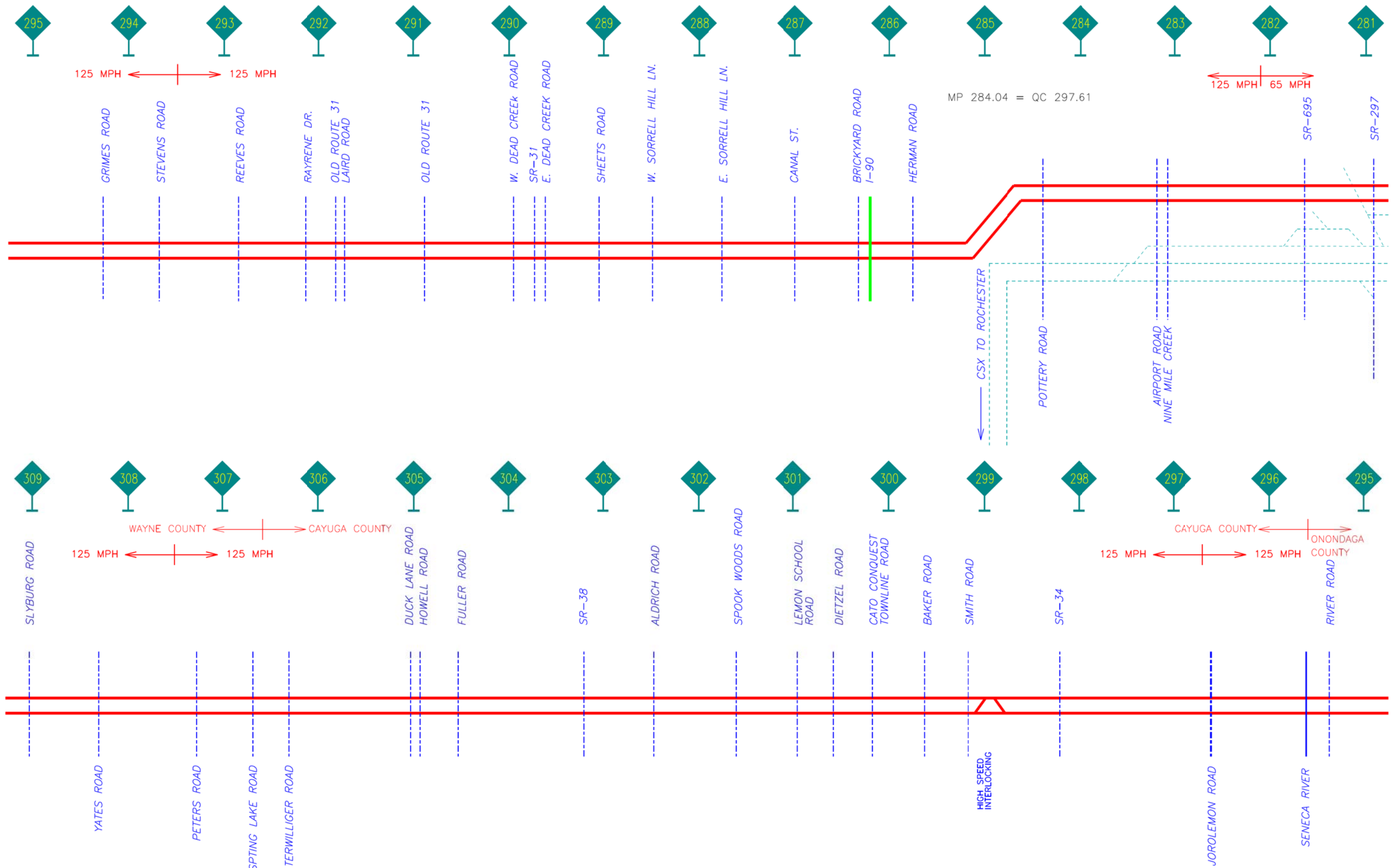


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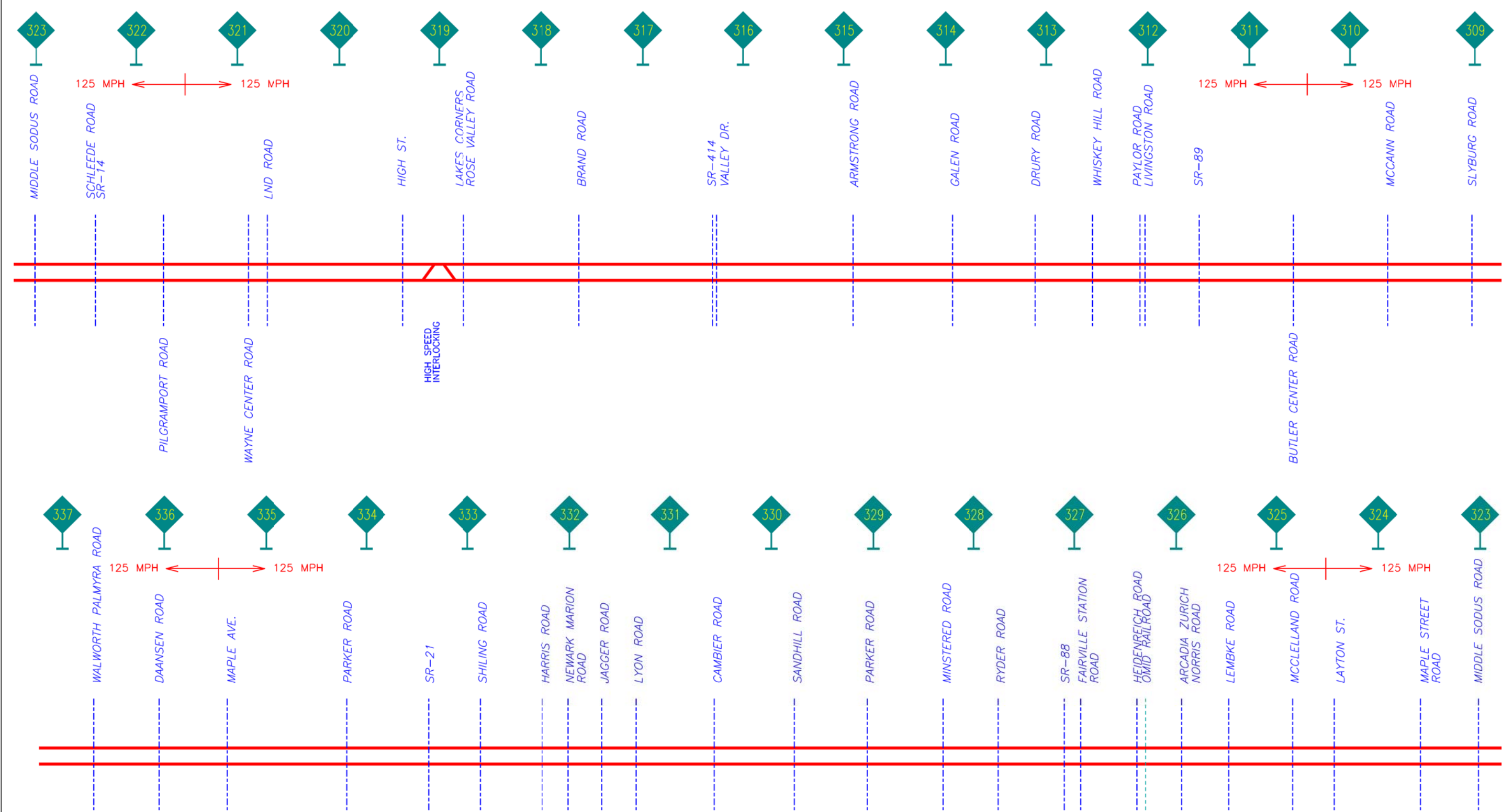
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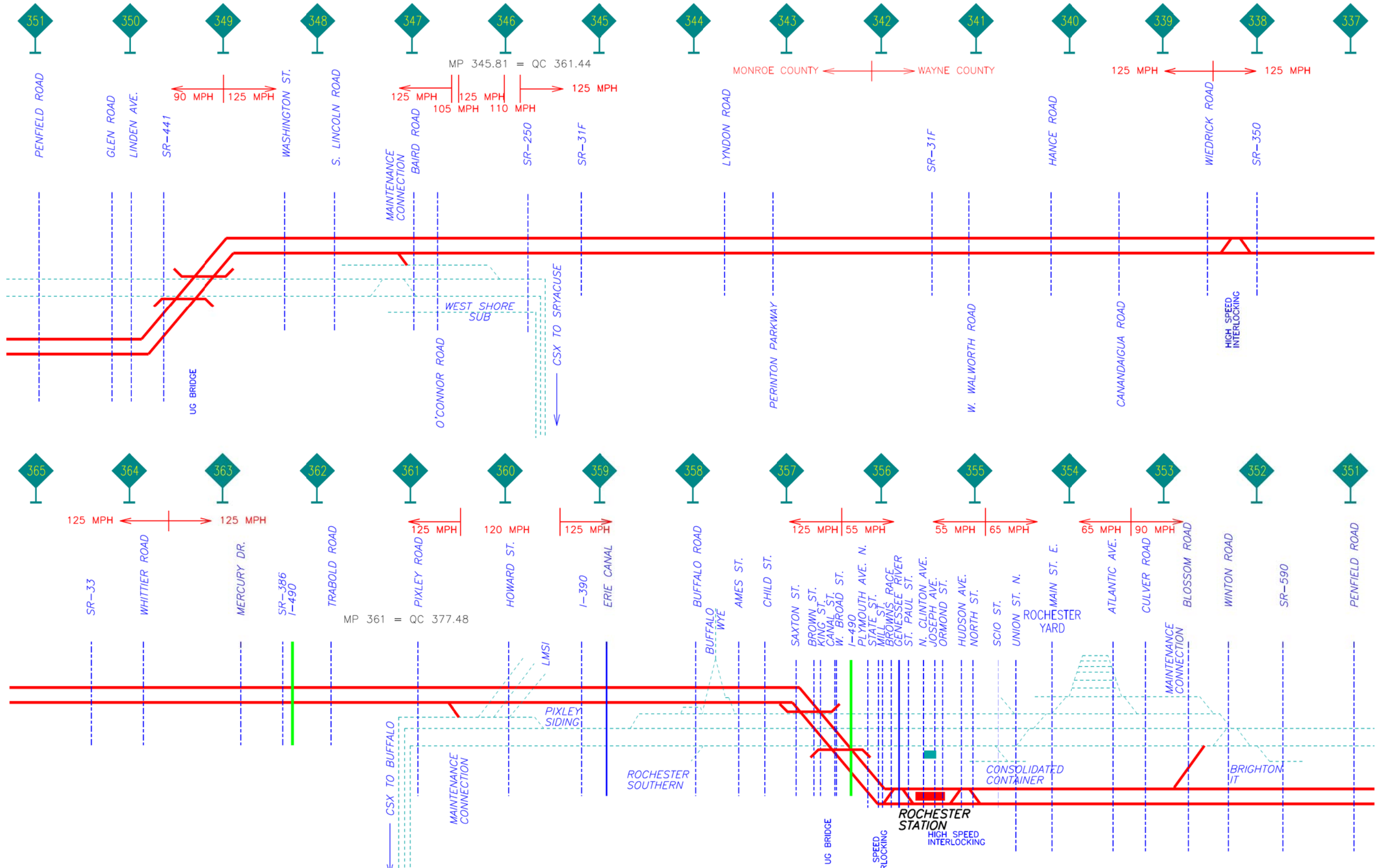
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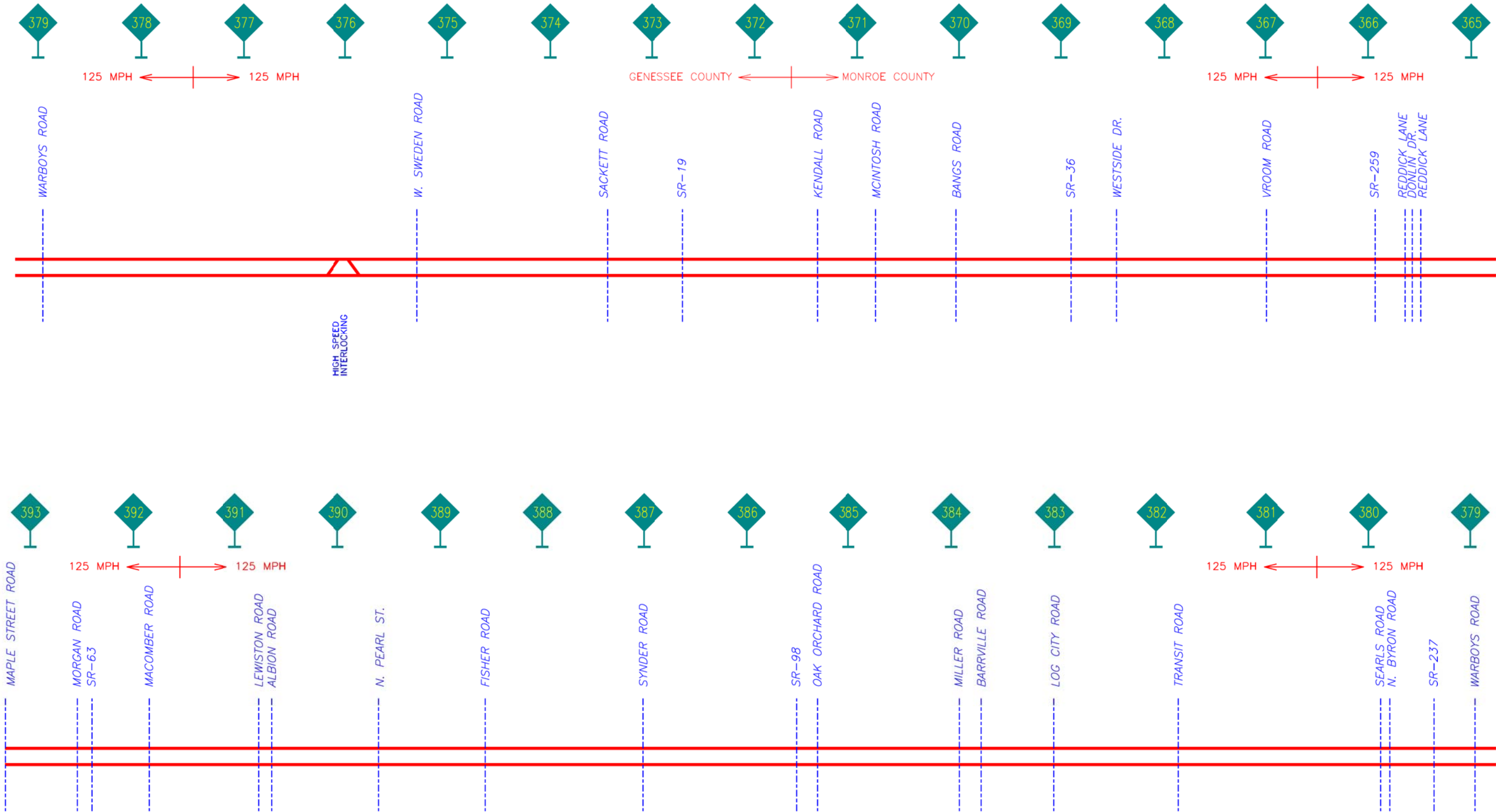
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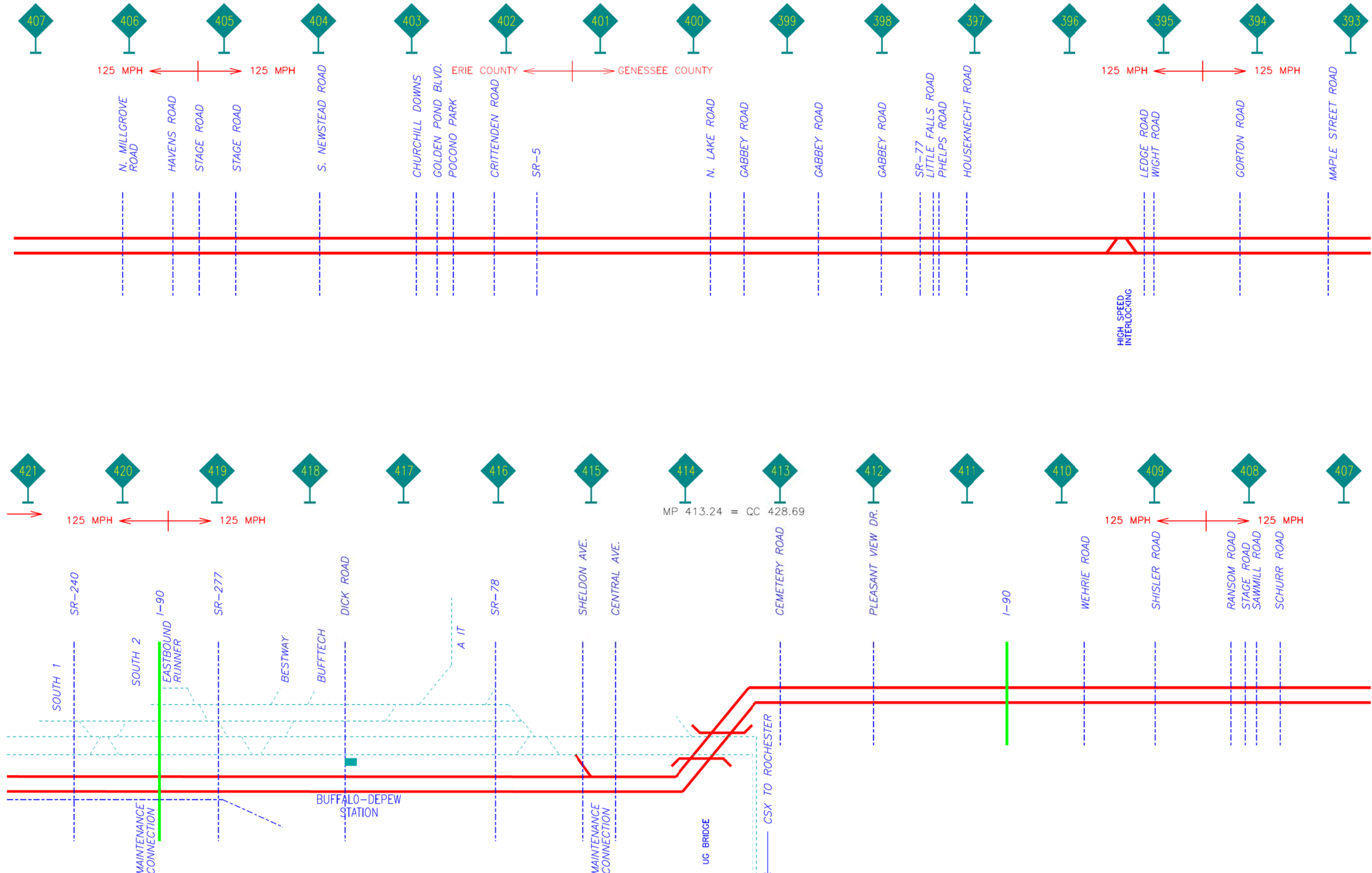
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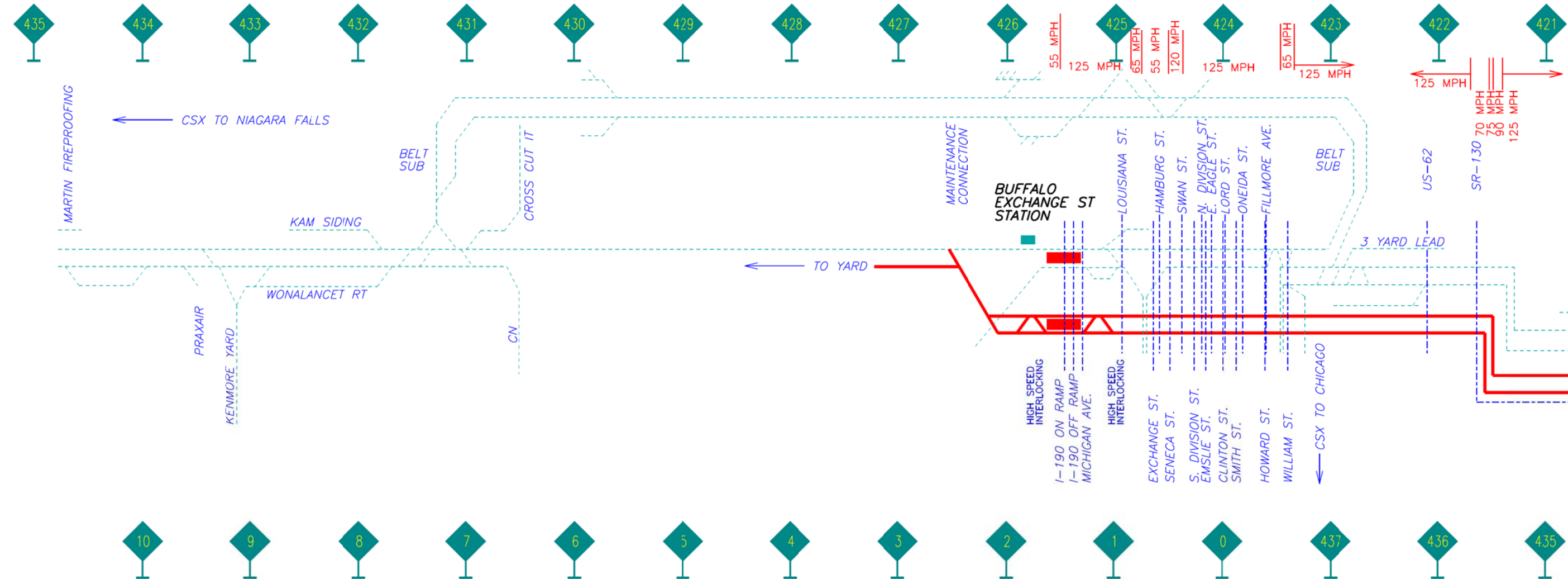
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Appendix B Ridership and Revenue Forecasting

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The following report was produced in spring 2011 and describes the target travel markets and the travel demand and subsequent market and revenue forecasting methodologies that were used to forecast travel demand and fare revenues anticipated in a 2018 base and a 2035 horizon year for the Base, or No Action (No-Build), and six build alternatives under consideration for the Empire Corridor High Speed Rail Program at that time. In late 2011, an alternatives screening process was undertaken that led to the rejection of the 79 mph (Maximum Allowable Speed; MAS) alternatives from the program (Alternatives 79A, B and C), and the inclusion of a Very High Speed (VHS) 125 mph MAS alternative, that would serve only the major markets of Albany, Syracuse, Rochester and Buffalo.

The same modeling and forecasting methodologies were applied to the 125 mph alternative as had been applied to the lower-speed alternatives, and the results reported in the Tier 1 EIS are therefore comparable in terms of relative ridership and travel time benefits, revenues, and costs and impacts.

The Alternatives Development and Screening Report is attached as Appendix C.

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Executive Summary

The *Ridership and Revenue Market Forecast for Empire Corridor High Speed Intercity Passenger Rail Tier I EIS* is a critical element of the Tier I Environmental Impact Statement process. The effort builds on initial market analysis related to the High Speed Intercity Passenger Rail initiative. This report provides a full discussion of the program context, the model development process, and results. Among the key findings are the following:

- A Total Ridership Forecast of 2.75 million for the 110 mph option in 2035 compared to 1.59 million under the Base (No Action) condition for the same 2035 model year. This represents a net increase of 1.15 million riders or a 74 percent increase in ridership over the Base (No Action) condition.
- Ridership responds to even modest increase in speeds.
- As noted in prior presentations during the forecasting process, the bulk of forecast increases in demand derives from the longer trips on the corridor; those from NYC to Syracuse, Rochester and Buffalo. For the entire corridor, rail draws about half of its forecast growth in ridership from the air market and approximately 25 percent from bus and auto trips. This is a positive result and consistent with public policy goals of reducing VMT and regional air travel.

The detailed major market analysis reveals that major market cities on the East-West portion of the Empire Corridor between Albany/Rensselaer and Niagara Falls are projected to experience significant growth in ridership. This result is in response to adjustments in sensitivity that were made to the model that better represented the impact of the competitive advantage accrued from improvements to the Empire Corridor versus other modes. However, this should be put in the perspective of relatively modest ridership in the existing condition. There may be value in testing the impact of other operational approaches which may yield higher ridership as this corridor has a very large potential competitive travel market (primarily auto) from which the rail share may grow.

These results are viewed as positive from a base demand perspective and will be bolstered by further consideration of rail-generated economic impact and attendant induced growth, scaled transit programs and local transit-supportive land use policies around stations. Further, additional operational considerations such as express or limited express routes have the opportunity to connect some of the major markets with faster travel times by removing intermediate stops. It is worth evaluating whether such approaches can make rail more appealing to travelers who currently favor air to make longer trips between corridor destinations.

These and other findings are discussed in greater detail in the report. In the Appendices to this report, forecast tables for any origin-destination pair or mode of travel can be found, further highlighting differences among the alternatives studied and their individual benefits. It must be noted that it cannot yet be determined which of the alternatives definitively yields the best selection relative to capital and operating/maintenance costs. Once this data is generated for the alternatives the Study Team will be better equipped to balance the benefits and equities among the alternatives.

1.0 Introduction

1.1 Overview

In anticipation of implementation of Empire Corridor High Speed Rail service between New York City and Buffalo, this report, a component of the Tier I Programmatic Environmental Impact Statement (EIS), provides ridership and revenue forecasts for each of the program alternatives. The ridership and revenue results are based on a competitive evaluation of existing travel modes (i.e., auto, bus, air, and rail), using various socio-economic, discretionary choice, and travel condition inputs.

1.2 Program Area

The program area is the 465 mile Empire Corridor running from New York City to Niagara Falls; Exhibit B-1. The Corridor is often described using its two distinct geographies – the southern corridor – or EC South -- and the western corridor – EC West. EC South runs from New York City to Albany, while EC West runs from Albany to Niagara Falls.

For analysis purposes, this study looked at three different levels of geographic detail. The first analysis level was the entire corridor, “corridor-wide”, which includes all 17 stations that will have Empire Rail HSIPR service. The second analysis level was “Major Markets,” which includes the Metropolitan Planning Organizations (MPOs) on the corridor; each MPO is centered around one of six major cities that together contain 13 of the corridor’s 17 stations. This is where the majority of new rail ridership is expected to occur. The third level of analysis was “Major Market to Major Market,” which allows the study to show which market pairs that are experiencing shifts in ridership and competitive mode share based on more local travel characteristics.

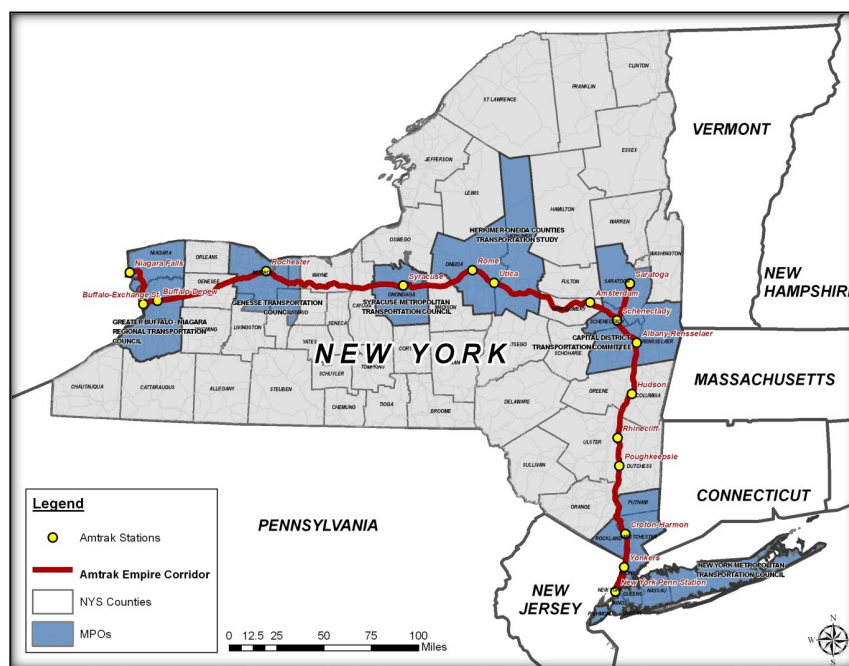


Exhibit B-1: Study Area

Exhibit B-2 below identifies the levels of analysis described above. It explains in specific detail what stations or geographies are included in each analysis level.

Level 1 Analysis	Level 2 Analysis	Level 3 Analysis
Entire Corridor (17 Stations)	Major Markets (6 Markets/13 stations)	Major Market to Major Market Pairs (15 pairs)
New York	New York (NYC)	NYC-ALB
Yonkers		NYC-UTI
Croton-Harmon		NYC-SYR
Poughkeepsie		NYC-ROC
Rhinecliff-Kingston	Albany (ALB)	NYC-BUF
Hudson		ALB-UTI
Albany-Rensselaer		ALB-SYR
Schenectady		ALB-ROC
Amsterdam	Utica (UTI)	ALB-BUF
Utica		UTI-SYR
Rome		UTI-ROC
Syracuse	Syracuse (SYR)	UTI-BUF
Rochester	Rochester (ROC)	SYR-ROC
Buffalo Depew	Buffalo (BUF)	SYR-BUF
Buffalo Exchange		ROC-BUF
Niagara Falls		

Exhibit B-2: Levels of Analysis

1.3 Objectives of Study

While New York State’s (NYS) population continues to grow, increasing demands upon the road and air travel networks, numerous past studies have indicated that providing a high-speed ground transportation system (HSGT) system in New York State can provide significant opportunity to alleviate congestion, reduce carbon emissions and petroleum dependence, improve air quality, and create broad economic opportunities from the creation of a rail-based “high skill, high-wage job base,”¹ to increased mobility creating greater access to jobs, the revitalization of upstate cities, and increased tourism and productivity.

The purpose of this study is to perform a comprehensive market and ridership demand assessment of the Empire Corridor Rail Service (ECRS), with the goal of understanding projected 2035 ridership as a function of travel time by city pair, level of service, reliability and projected fare structure. The purpose of these

¹ New York State Department of Transportation “Moving Toward the 21st Century: A proposal for High Speed Ground Transportation in the State of New York” 1995.

results is to translate future ridership into future gross revenue. This study seeks further to use these gross revenue estimates for each alternative to enable an assessment of their relative costs and benefits. The end product of this report is limited to specific, pre-determined service plans for future improved rail service and will result in a series of travel demand forecasts for these plans. This task in coordination with service planning, capital and environmental planning will facilitate the identification of an optimal rail service level that achieves the highest ridership for a level of investment (both capital and operating) that is attainable and sustainable. The analysis conducted within this task will result in ridership demand forecasting model that will be used to help develop the deliverables associated with other Tasks in the Tier 1 EIS, particularly Task 4: Alternatives Development and Planning and Task 7: Operations Planning and Simulation Modeling.

The analyses conducted within this task will also produce base Service and Operating Plans, which will serve as a basis for creating infrastructure-based Service and Operating Plans for 2018 and 2035 Build scenarios for three different maximum speeds (79, 90 and 110 mph); using supplied service and operating plans through 2012, 2018 and 2035. These results will be compared against existing and forecasted trips in Section 6 of this report.

This report provides additional background information about the corridor as input to the travel demand model, including socioeconomic conditions and existing transportation conditions; as well as consideration and evaluation of other key market drivers that will allow for optimization of revenue and ridership; and presents the methodology used in obtaining, analyzing, and modeling the data.

1.4 History of Empire Corridor HSIPR Demand Forecasting Efforts

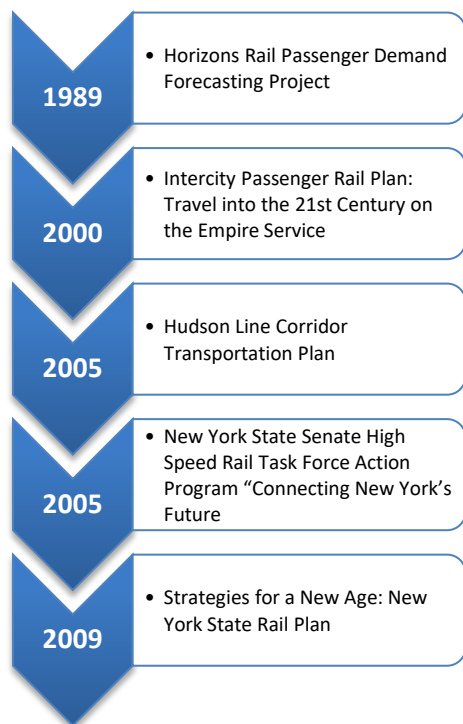


Exhibit B-3: Previous Empire Corridor Demand Forecasting Reports

Since 1989, public and private entities, political leaders and industry experts have collaboratively worked towards the goal of enhancing Empire Corridor passenger rail service to foster an improved transportation mode that would be highly competitive with air and auto travel. Many studies have been undertaken, some of which included travel demand forecasting. The following is a brief review of the travel demand forecasting studies which have been undertaken. Exhibit B-3 provides a graphic summary of the inter-relationships of these previous Empire Corridor Demand Forecasting Reports.

The first Empire Corridor High Speed Rail Study was the Horizons Rail Passenger Demand Forecasting Project commissioned by NYSDOT in 1989. Seeking a review of travel behavior and an assessment of the implications of various rail strategies in the EC West, the report identified approximately 109 million person trips by air, auto and bus on Interstates 87 and 90, and rail. Auto was the predominant travel mode (92.2%), followed by air (4.8%), bus (1.8%) and lastly, train (1%). Applying the then-existing mode shares to future travel demand, the study indicated that rail travel and revenue in the EC West would increase by 50 percent between 1986 and 2010, and revenue would grow from \$8.3 million to \$12.6 million. The

study found that providing a 10 to 40 minute time savings over current rail travel-time would result in 4.5 million to 11.3 million additional passenger miles by rail and \$0.3 million to \$1.3 million in additional rail system revenue.

As Empire Corridor ridership peaked at 1.26 million in 2000, Intercity Passenger Rail Plan: Travel into the 21st Century on the Empire Service was released in February 2000, defining NYSDOT's *Vision for High Speed Passenger Rail Service*. The Vision Plan details specific ridership and frequency improvements; specifies expected public benefits; summarizes capital cost expenses and anticipated cost for each phase; outlines next steps; and suggests future high speed rail projects and services to meet these objectives.

Building on the prior work, the Hudson Line Corridor Transportation Plan, released in 2005, provided a comprehensive study of the train operations and infrastructure needs for the joint users of the corridor (Metro North Railroad (MNR), Amtrak, CSX freight (CSX), Canadian Pacific Railway (CP), and NYSDOT) over a 20 year planning period. The general goals were to determine operational and system improvements that would provide increased capacity, flexibility and train speed as well as improvements in system cost effectiveness and enhanced safety.

Anticipating that Metro-North peak ridership would grow by 50 percent from 2002 to 2022, necessitating a 17percent increase in the number of daily trains, and combined with Amtrak desires to increase the number of daily trains by 88 percent by 2022, the Hudson Line Corridor Transportation Plan assessed current year (2002) and 2022 no-build conditions, and 2022 alternatives using rail simulation software. While the "no build" simulation showed insufficient infrastructure to accommodate 2022 service needs, the alternative scenarios, based on a series of system improvements and revised operating plans (developed through a "charette" session with a team of rail professionals) indicated operating performance equal to or superior to the 2002 base scenario, while processing the projected greater number of trains.

The New York State Senate Rail Task force was established in June 2005. The Task Force released the New York State Senate High Speed Rail Task Force Action Program Connecting New York's Future, on December 23, 2005. Describing how the Empire Corridor service was once a single, unified railroad operation under the New York Central Railroad, the report recognized that the Empire Corridor had become more important than ever, as 90 percent of the NYS population was living there and the EC West segment provides a key route for CSX freight connections to west coast ports and the eastern seaboard through Chicago. Present day control of the Empire Corridor is highly fragmented, however, with CSX and MNR controlling the majority of the 460-mile Empire Corridor, and Amtrak, the operator of intercity passenger rail, controlling only 30 miles. This disaggregated ownership creates reliability problems as only 60 percent of Amtrak trains were arriving on time during that period, with passenger trains receiving the lowest priority for train dispatching by MNR and CSX.

To improve reliability and enhance service towards a high-speed operation, the Task Force Action Program established short term (1-3 years) incremental service and capital improvements, as well as new operational and institutional arrangements. The plan also proposed a longer term phased implementation of a Very High Speed Rail (VHSR)/Maglev system, to be accomplished through a market-based partnership. Given the proposed improvements, the NYC to Albany rail-trip time was estimated to decrease from 2 hrs 25 min to 1 hr 59 min by 2009, increasing ridership to 1.96 million passengers annually, based on a capital investment of \$428 million. By 2015 the program was projected to reduce trip time to 1 hr 48 min, increasing ridership to 2.99 million passengers with an additional capital investment of \$174 million. By 2025, a Maglev system would be complete, resulting in 6.71 million riders and no further capital

investment. The Program was also anticipated to reduce the Albany-to-Buffalo trip time from 5 hrs 45 min to 5 hrs by 2015 and increase ridership on that segment to 0.96 million annually, based on a capital investment of \$613 million, eventually reducing trip time to 2-3 hrs under a Maglev system by 2025 with 3.47 million riders, and no further capital investment.

Federal support of passenger rail gained momentum when the Passenger Rail Investment and Improvement Act of 2008 (PRIIA) was passed on June 11. The bill reauthorized Amtrak, while tasking Amtrak, U.S. DOT, FRA and the states to jointly improve operations and facilities so as to enhance intercity passenger rail. In addition to other programs, PRIIA authorized funds to establish and implement a high-speed rail corridor development program, to be administered through DOT. High-Speed Rail was defined as intercity rail passenger service that achieves operating speeds of at least 110 miles per hour.

Concurrently, Strategies for a New Age: New York State Rail Plan 2009, the State's first rail plan in 22 years, set forth a framework for the management, promotion and improvement of New York's rail system through 2030. While the report indicated that passenger ridership increased 23 percent between 2007 and 2008 in the EC West segment of the Corridor, the plan recognized the need for setting and achieving operational goals, including 95 percent on-time performance, and reliable, faster and more frequent service, to make rail competitive with auto travel. The plan also detailed the "Third Track Initiative" to expand, enhance, and support capacity growth for intercity passenger and freight rail service in the EC West segment. Lastly, the plan advised that the future success of passenger and freight rail transportation in NY could only be achieved through the joint effort of the public and private sectors, and a stable and predictable funding partnership.

There have been a series of federal actions to support HSR initiatives in response to the country's post 2008 economic downturn. As part of the American Recovery and Reinvestment Act of 2009 (ARRA), passed by Congress on February 13, 2009, \$8 billion was allocated to High-Speed and intercity passenger rail. This funding represents the first appropriation under the three new grant programs established in PRIIA. Following that allocation, on April 16, 2009 President Obama called for a collaborative effort among the Federal Government, states, railroads, and other key stakeholders, to create a national network of High-Speed Rail corridors.

Following the ARRA appropriations, the FRA launched the High-Speed Intercity Passenger Rail (HSIPR) Program in June 2009. Under this program, NYSDOT submitted a grant application to FRA on October 2, 2009, requesting \$11.6 billion dollars to fund the Empire Corridor HSR program.

On January 28, 2010, President Obama announced the first recipients selected to share the \$8 billion in funding. New York State received \$151 million, with \$148 million going towards seven Empire Corridor projects. In addition to using this funding to advance the capital program, NYSDOT initiated a Tier 1 Environmental Impact Statement for the proposed New York State Empire Corridor High-Speed Rail System. With its completion, the Empire Corridor will become eligible for additional funding under the HSIPR program.

1.5 Market Qualities of Successful High Speed Rail

With varying distances between major markets, different maximum achievable speeds on different segments, and differing condition of the right-of-way,² the potential for economic stimulus, congestion relief and environmental benefits of HSIPR differs for each potential market in the EC Corridor. With these factors in mind, the FRA HSIPR Program developed three broad definitions of high speed service:

HSR Express: Service operating in corridors 200-600 miles in length with top speed of over 150 mph on primarily dedicated tracks. These services are expected to be very competitive with air and auto trips in these markets.

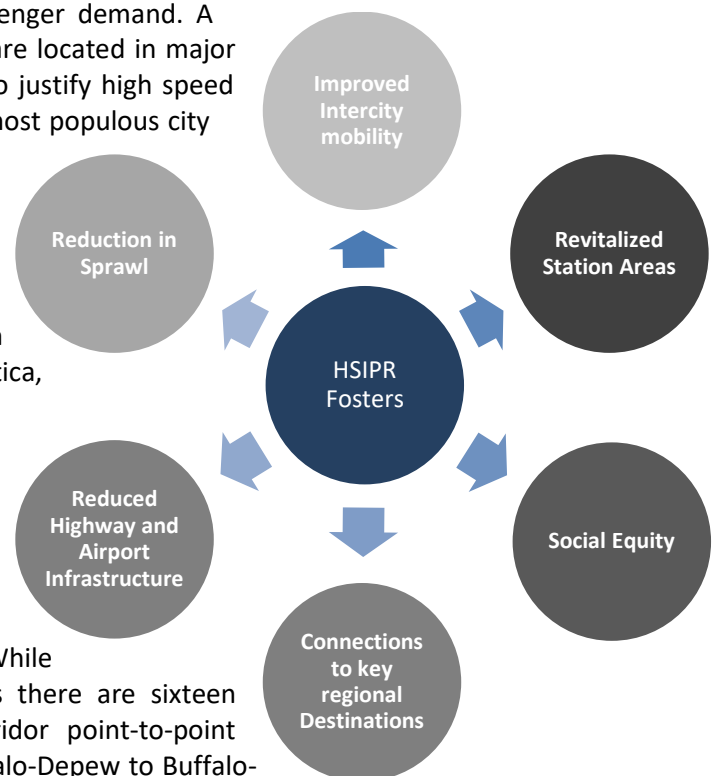
HSR Regional: Service operating at a top speed of 110-150 mph on a mix of dedicated tracks and tracks shared with slower passenger and freight trains.

Emerging HSR: Corridors of 100-500 miles in length with service operating at top speeds of 90 - 110 mph on tracks shared with freight and/or commuter services. This service is intended to build a market for intercity rail and is only expected to have a limited effect on passengers from other modes. The FRA is positioning these corridors as having potential to someday achieve high-speed service through incremental investments and service improvements that could build market over time. Empire Corridor High Speed Intercity Passenger Rail falls within this “Emerging HSR” category.³

The FRA selected corridors to receive stimulus funding where the appropriate conditions existed to support strong passenger demand. A major grant evaluation criterion was ensuring stations are located in major metropolitan areas, creating sufficient travel demand to justify high speed service. The Empire corridor fulfills this criteria, as the most populous city and metropolitan statistical area (MSA) in the country, New York City, part of the New York-Northern New Jersey-Long Island and Southern New Jersey-Pennsylvania MSAs serves as the southern anchor of the Empire Corridor with over 19 million residents as of the 2010 US Census. Additionally, other cities with station locations along the route, namely Albany, Rochester, Utica, Syracuse and Buffalo are classified as MSA's.

A second condition for successful HSIPR service is having the appropriate distance between stops. HSIPR should be confined to distances between 100-500 miles, and FRA found that stops 250 miles apart should receive the highest value.⁴ Shorter trips are best for auto and commuter rail, while longer trips are best for air travel. While the Empire corridor from NY to Buffalo is 460 miles there are sixteen destinations on the route. This means Empire Corridor point-to-point distances may range from as little as 6 miles (from Buffalo-Depew to Buffalo-

Figure B-4: Benefits of High Speed Intercity Passenger Rail



² Regional Plan Association. America 2050: Where High Speed Rail Works Best. 1. September 2009.

³ Ibid, 2.

⁴ Ibid, 3.

Exchange) to as much as 79 miles between adjacent markets, (between Syracuse and Rochester); See Exhibit B-5. But the overall length of 460 miles between NYC and Niagara Falls certainly meets the definition as FRA intended.

The third condition is locating HSIPR in metropolitan regions with existing transit systems. One of HSIPR's competitive advantages over air is that passengers generally arrive in a city center from where riders can avail themselves of connecting regional rail, commuter rail and local transit networks. For travelers with both their origin and their destination in central cities, HSIPR service is convenient for business and non-

business travelers alike if the service offers robust connections to regional transit. With its large population located within easy access to the regional transit system, New York City has optimum transit connections, making HSIPR a viable, competitive service.⁵

Further, High Speed Rail should be located in Metropolitan Regions with strong Gross Domestic Product (GDP). The southern anchor of the Empire Corridor is part of the Northeast Mega-region, accounting for one-fifth the nation's GDP. Despite several of the EC West markets underperforming economically, most of the MPO's have large employment markets and populations which, taken together, are equivalent to a corridor with significant GDP. HSIPR service that directly connects the heart of New York City to city centers on the EC West segment of the Corridor, including Buffalo, Utica, Rochester and Syracuse, may further stimulate the economy of these less economically robust cities.

Exhibit B-5: Empire Corridor Distance Between Stations

Station	Distance on Corridor (mi)	Distance between Stops (mi)
New York	0	
Yonkers	14	14
Croton-Harmon	32	18
Poughkeepsie	73	41
Rhinecliff-Kingston	88	15
Hudson	114	26
Albany-Rensselaer	141	27
Schenectady	159	18
Amsterdam	177	18
Utica	237	60
Rome	250	13
Syracuse	291	41
Rochester	370	79
Buffalo Depew	431	61
Buffalo Exchange	437	6
Niagara Falls	460	23

Competitive High Speed Rail service is also most successful when located in regions with high congestion levels. Under these conditions, auto drivers are more easily influenced to transfer to a transit mode if it is competitive with or faster or cheaper than the trip it replaces. The FRA notes that HSIPR "systems compete more with short-haul air travel than intercity auto trips and have the potential to decongest some of the nation's most congested airports."⁶ This includes all three New York metro airports, which have poor on-time performance rates due to both ground-side and air side congestion; see⁷ Section 4.5 Auto Trips Data Collection.

Finally, the most successful high speed rail service would be located within a mega-region. When located in such a large and dynamic economy, HSIPR can anchor a greater HSIPR network, fostering rail

⁵ Ibid, 4.

⁶ Ibid, 5.

⁷ Bureau of Transportation Statistics, http://www.bts.gov/programs/airline_information/

connections between major cities. Cities within megaregions also tend to have the population, supportive densities and transit connections best suited to HSIPR systems.⁸

1.6 Empire Corridor Barriers and Strengths

As an Emerging HSR corridor, the Empire Corridor possesses natural strengths, and appropriate conditions, consistent with FRA recommendations, that position it for success. The corridor's principal cities, New York, Poughkeepsie, Albany, Utica, Syracuse, Rochester, and Buffalo, are well spaced for high-speed rail service, and are the most densely settled areas on the corridor; see Exhibit B-1. This is an ideal condition for gaining and sustaining increasing ridership, which in turn justifies frequent service, as dense population centers are more transit-oriented and would be more likely to use a reliable, well-scheduled transit service. However, this means that true success will depend not just on the development of HSIPR, but on the service being supported by the appropriate surrounding land use, development density, and local transit links.

Although the success of HSIPR depends on the appropriate population density in the station cities, many Empire Corridor cities have experienced a population decline over the past thirty years directly resulting from a decline in their core centers, over the past fifty years. This decline is directly linked to the decline of manufacturing industries in both the US and these cities. The United States Regional Plan Association and Lincoln Institute of Land Policy, through their joint venture, America 2050, identified "Underperforming Regions," as compared to overall national economic performance regarding population, employment, and wages. Underperforming geographies tend to be in agricultural and resource-dependent rural regions, as well as former industrial regions. This classification is typical of the EC West segment off the EC Corridor, and as a result, portions of this Corridor do fall into the category of an underperforming region.⁹ America 2050 found that the largest underperforming region, in terms of population and economic potential, is the Great Lakes mega-region, which includes portions of the EC West Corridor. With a 2009 population of 54 million, this mega-region has lost more than 1.2 million manufacturing jobs since 1990.¹⁰ By investing in infrastructure-based strategies, such as those provided through the ARRA and FRA's high-speed rail initiative, the Federal Government seeks to provide a catalyst for positive growth and change within these regions.

Meanwhile, land use patterns, supported by the zoning and development practices of the Post-WWII era, have led to highly dispersed development patterns both in urban and rural areas, further reinforcing auto-dependency throughout the Corridor. As Section 4.0, Existing Travel Market Conditions shows, over 65 percent of all trips made along the Corridor are made by auto. To support HSIPR, local and regional governing bodies and agencies must begin to advocate and foster denser, transit-supporting development patterns. Transit authorities, regional planning bodies and county planning boards must work together to provide transit supporting land uses around HSIPR stations as well as transit linkages along major corridors and between local population hubs.

As an example of decline and opportunity for urban restoration, the Buffalo/Niagara Falls metropolitan region, with the City of Buffalo as its major city, serves as the far western market for the Empire Corridor.

⁸ Ibid, 5-6.

⁹ Lincoln Institute of Land Policy and Regional Plan Association. America 2050 Research Seminar: Discussion Papers and Summary. Healdsburg, California- March 29-31, 2009.

¹⁰ Ibid, 13.

This region has experienced a near 17 percent population decline between 1990 and 2008. Buffalo, the second largest city in New York State, comprises approximately 28 percent of the Greater Buffalo-Niagara Regional Transportation Council region and is expected to experience population and employment growth between 2012 and 2035.

Meanwhile, the metropolitan Albany region has recognized a growth in population over the past decade based on recent results from the 2010 US Census,¹¹ yet significant portions of its core metropolitan population has declined while other nearby sprawled suburban and rural areas have gained population – leaving a relatively mixed picture and relatively depopulated city center.¹² Significant density - at least 4,000 persons per square mile in the core area – is vital for HSIPR ridership. The metropolitan populations lying on the suburban fringe often find it more convenient to use their private automobiles and are resistant to efforts to shift them from auto to rail. Still, the City of Albany is anchored by a large university population and the core workforce is dominated by State employees, health-care and education workers. This academic and business population base within the core city could benefit from the convenience of HSIPR, particularly as it links them with increasing ease to major education and health centers in New York City. Section 3 of this Task Report identifies the Capital Region as an MSA which is expected to experience some of the largest percentage gains in employment and population between 2012 and 2035 (Exhibits B-10 and B-11). The form of development to accommodate this expected increase in population and employment, as well as whether they are able to further develop supporting transit links, will have a large impact on HSIPR ridership. Dense development located near the HSIPR station, or located in a hub that is itself linked to the station via fast, reliable transit, will be critical in making HSIPR successful. The Capital District Transportation Committee's existing Community and Transportation Linkage Planning Program, which aims to integrated land use and transportation planning, must continue to seek support from planning authorities from Albany, Rensselaer, Saratoga and Schenectady Counties, and the local transit authorities must continue to evaluate, develop and implement a transit-supporting transportation and land use vision throughout the Capital district region.

1.7 Forecast Development Process

The travel demand forecast development process was based on standard planning principals, evaluation of the required level of detail in available data, and available modeling platforms. The approach can be simplified to the process diagram below. The major components of this forecast development process are briefly discussed in the following narrative section.

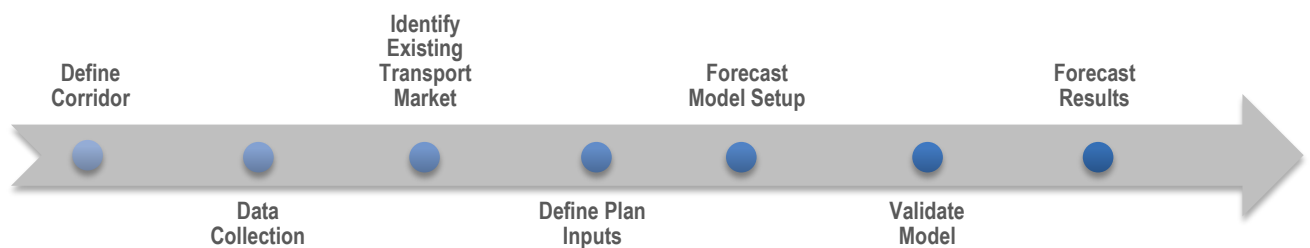


Figure B-6: Forecast Development Process

¹¹ <http://alloveralbany.com/archive/2011/03/25/capital-region-2010-census-population-totals>

¹² <http://projects.nytimes.com/census/2010/map>. See Albany Metro area for assessment of population by census block.

1.7.1 Market Definition

To begin developing the forecast model, (as detailed in Exhibit B-5) it was necessary to understand the extent of the potential market. This was done by defining the corridor based upon the relationship of existing Empire Corridor Amtrak stations to the geographic region in which they are located. Station areas and their identified general and potential market service areas served as the basis by which to compare rail transit and other travel modes (auto, bus, air). This allowed for the assembly of the existing transportation network, and related existing and forecasted socioeconomic and transportation market conditions. This network became the basis through which major markets and sub-markets were evaluated.

Data collection was undertaken to find the necessary information on socioeconomic and transportation conditions. Socioeconomic trends were analyzed to compare the forecasted change over time in relation to population, households and employment. Section 3.0 Socioeconomic Conditions and Projections details these findings. Existing competitive transportation modes were compared in relation to time, frequency, reliability, congestion levels and cost and are detailed in Section 4.0 Existing Travel Market Conditions.

1.7.2 Model Inputs

Existing and Preliminary HSR service options, including, the schedule, speed, number of stops, fares, and mode choice selection criteria were defined and input into the model for 2009, the model Existing Conditions year. The 2009 existing conditions model was then calibrated (and its driving algorithms adjusted) until its outputs matched known travel behavior. The forecasted modal demand, fare price, socioeconomic projections, congestion level, station to station run time, frequency, dwell times, intermediate destinations, and induced demand was input into the model for the following years:

2012 - Projected for Base Conditions / EIS Base Year

2018 - Phase I of Rail Service Improvements Completed (79, 90 and 110 mph)

2035 - All Rail Service Improvements Completed (79, 90 and 110 mph)

The model was also configured to analyze no-build scenarios, which analyze growth in ridership based upon projected socio-economic changes but with no change in transportation service between 2012 and 2018/2035.

1.7.3 Model Development Methodology

Following the completion of data entry and calibration, preliminary model runs were performed. The growth and ridership for all six 2018 and 2035 scenarios (identified above under model input section and defined in more detail in Section 7 Sensitivity Tests) were compared against the 2012 baseline. These results were evaluated and service options were then refined to result in projected ridership levels. This section briefly describes the methodological approach to the model design, data development and implementation. A more complete description is presented in Appendix A: Methodology.

Model Design and Specification

This section describes the basic structure of the Empire Corridor intercity travel demand model. Cube Voyager Software, designed by Citiliabs, was used to construct the model and to provide forecast outputs. The model is configured to produce a forecast of zone-to-zone person-trips by mode (auto, air, bus, and rail). By zone, this report means census block. The zones as shown in Exhibit B-7 include all 1040 census blocks for the State of New York and 40 external census blocks outside of the state. This means that the model evaluates travel between all of these blocks. The capture of rail transit users from this matrix is based on mode selection parameters that consider travel time, cost, level of service, and other factors – and weights the gravity of the train station to transfer from one mode to another based on availability of

other modes and their relationship to the zone pair considered.

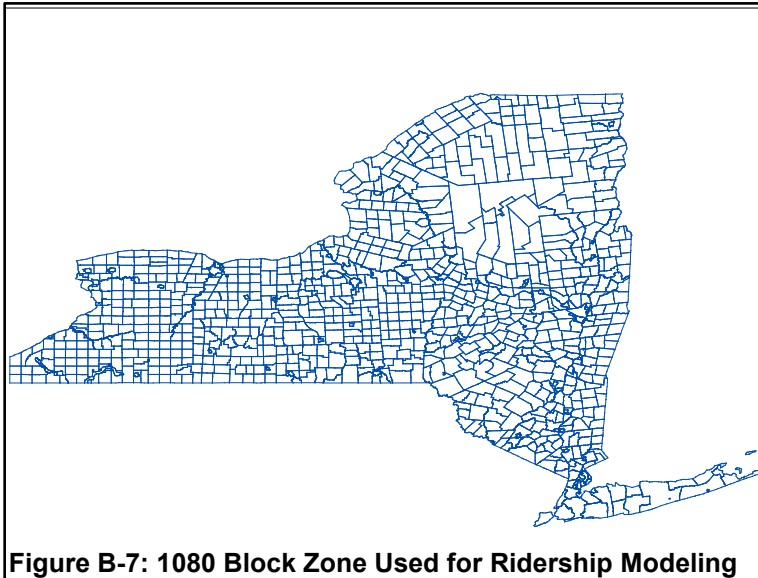


Figure B-7: 1080 Block Zone Used for Ridership Modeling

Furthermore, a design goal of the model is to minimize the number of parameters requiring calibration, instead making maximum use of the observed trip movement data. (This study effort is not intended to collect or include conventional household or personal survey data, as explained further in the next section). Finally, the model structure is intended to be scalable, so that the initial corridor model needed for rail ridership forecasting can be expanded in scope and detail to eventually become a

statewide intercity travel demand model.

An initial "pivot" model structure was adapted previously to meet the needs of this program while taking into consideration the other constraints and goals identified above. The pivot model includes the four steps of a conventional Urban Transportation Planning System (UTPS) style model: trip generation, distribution, mode split, and assignment. However in this "pivot" structure each of these steps is formulated incrementally.

In relation to other models surveyed,¹³ the structure of this model is similar to that reported in the Thailand high-speed rail feasibility study, while incorporating aspects of the California HSR model and prior New York models. It is important to note that, in addition to being formulated incrementally, the process described above reverses the conventional order of the four steps in the UTPS model, in order to pass information between the steps in an integrated manner.

The mode split and trip distribution steps are incremental multinomial logit models connected using composite impedance terms. Together these combined models forecast the counterfactual number of person-trips that would travel between each zone pair by mode if generalized travel costs changed, without altering the magnitude of trip ends.

¹³ See Appendix A

In practice, the unobserved characteristics of non-auto modes are correlated, creating unique competition patterns between the highway mode and other modes. The model requires a highway network plus a set of multi-modal public transit lines representing non-auto modes of travel. Zone-to-zone highway generalized costs are extracted by using the Cube Voyager HIGHWAY program to construct minimum-time network paths from origin to destination and tracing (or "skimming") the time, distance, and toll cost associated with each origin-destination pair.

For the Empire Corridor study, highway network congestion was estimated by calibrating a statewide vehicle-trip matrix from Highway Performance Monitoring System¹⁴ (HPMS) counts using maximum likelihood origin-destination matrix estimation techniques, and then assigning this matrix to the highway network using an iterative user equilibrium algorithm. For future years, the vehicle-trip matrix is factored to reflect growth in total vehicle-trip ends, based upon changes in socio-economic zonal variables. The vehicle traffic growth factor is computed as the ratio of future to base population plus two times employment in each zone, a widely used heuristic when more detailed trip generation parameters are not known. These growth factors are then used to compute row and column matrix margin targets for an iterative proportional fitting algorithm implemented using the Cube Voyager FRATAR module to develop a future year vehicle trip matrix.

Similarly, growth factors are computed for intercity person-trips as well, based upon the change in socio-economic zonal variables. However, in this growth factor calculation, employment is weighted based upon the assumed percentage of business travel (identified from Bureau of Transportation Statistics). These growth factors are applied to the forecast person-trip table created after applying the destination shifts indicated by the incremental logit model. Lastly, the shifted mode share percentages calculated using the hierarchical logit mode choice model are applied to derive future year intercity travel by mode.

The "pivot" model described above has only a handful of calibrated parameters, most of which are directly transferrable from other studies or may be asserted based upon conventional industry standards. It is also scalable, working essentially the same way regardless of zone system or network size, and accommodating expansion of detail in future revisions. The counterpoint to this simplicity and scalability is that the model is heavily dependent upon the input base travel matrices—if no travel is observed between two zones by a certain mode in the base scenario, none will be predicted in the future scenario. Thus, although appropriate for analysis of the proposed upgrades to the existing Empire Corridor, the pivot model structure would be inappropriate for analysis of a new location rail corridor or extension of rail service into a presently un-served area. Furthermore, in practice, it is impossible to observe trips by mode from their "true" origin to their "true" destination; rather the data in this study included observed ridership from station to station and similar part-trip data for other modes (i.e. interchange to interchange, airport to airport, and terminal to terminal). Thus most of the effort involved in calibrating the pivot model was dedicated to estimating the true origin and destination zone for these observed partial trips.

¹⁴ <http://www.fhwa.dot.gov/policy/ohpi/hpms/abouthpms.cfm>

1.7.4 Data Development and Implementation

The modeling approach for this study was structured to make maximum use of available databases. To help quantify the existing shares of travel by the various modes in the corridor, the following existing data sources were used:

Annual 2009 Amtrak boardings and alightings by station

- Annual 2009 Thruway trips by interchange pair
- Annual 2009 air travel (passengers) between major NY airports
- Bus trips between major NY cities in 2009
- Various ESRI GIS format data was also compiled from public sources, including:
 - National Highway Planning Network (NHPN) roadway centerline shapefiles, with attributes describing the functional classification, number of lanes, and Annual
 - Average Daily Traffic (AADT) of major roadways included in the Highway Performance Monitoring System (HPMS)
 - Locations of interchanges and toll plazas on the New York State Thruway
 - Polyline data representing the Amtrak rail network and point data representing actively used and proposed station locations
 - Polyline data representing intercity bus routes and point data representing the current bus station locations
 - Point data representing the locations of major airports in New York City, Albany, Syracuse, Rochester, and Buffalo
 - Census polygon area (e.g. county, subdivision, tract, block) boundaries
 - New York area transit information imported from Google Transit Feed format
- In addition, socio-economic data were compiled from the following sources:
 - Block-level demographics from the decennial U.S. Census 2000 files
 - Block-level employment estimates at places of work from the Longitudinal
 - Employer-Household Dynamics "OnTheMap" synthetic micro-data

Given the scope of the rail ridership forecast effort, to directly estimate parameters for trip generation, distribution, and mode split models, it was necessary to maximize use of the available data while requiring minimal estimation and calibration of new model parameters. Therefore an incremental or "pivot modeling" approach based upon insights from a literature review (discussed further in Appendix A) was utilized.

A base "background travel" vehicle-trip matrix was directly estimated using "Cube Analyst" (A Citilabs software plug-in to Cube) from observed AADT reported in the NHPN network based upon HPMS databases. A capacity-constrained iterative assignment was performed to estimate congested base generalized travel costs between Traffic Analysis Zones (TAZs) throughout the state.

The base travel information by mode (auto, bus, rail, air) was disaggregated to the TAZ system, which is based directly upon Census geography, using County subdivisions as the target scale for intercity travel analysis.

To develop future year no-build forecasts, the networks remain the same, and:

- Growth in total trip productions and attractions is assessed using a standard FRATAR process incorporating socio-economic growth factors derived from Woods and Poole projections.
- After factoring to reflect growth, the "background travel" matrix is assigned to estimate the level of increase in highway travel costs due to congestion.
- Mode shift from auto to other modes is calculated based upon applying a nested multinomial logit model implemented using an incremental formulation. The nest separates auto from the other modes, providing a means of controlling the overall level of diversion and addressing the IIA concerns that initially precluded use of multinomial logit in the 1977 Buffalo-NYC rail ridership study. This nesting structure is also generally consistent with that used in the California statewide HSR forecasting model, as well as the Amtrak Northeast Corridor Model.
- Shifts in destination choice due to changing travel costs between zones may also be calculated by applying a multinomial logit model formulated incrementally, based upon changes in composite cost from mode split. The destination shift model may be turned off, if desired.
- Future year build forecasts are produced in the same manner, with the addition of rail networks coded based upon project assumptions, including service frequency and schedule information

A complete report on methodology is provided in Appendix A: Demand Management Model Methodology.

2.0 Study Area Corridor Description

2.1 Overview

The 463 mile long Empire Corridor spans from the distance between New York City and Niagara Falls, and serves New York's major urban areas and markets, specifically New York City, the Mid-Hudson Region, Albany-Rensselaer, Schenectady, Utica, Rome, Syracuse, Rochester, and Buffalo-Niagara Falls. As shown in Exhibit B-8: Study Corridor Major Markets, the state's most populous cities and largest metropolitan areas are located along the corridor. The counties along this route account for approximately 85 percent of the state's total population and approximately 90 percent of the state's total employment.¹⁵

2.2 Transportation Network

The cities along this corridor are also serviced by four primary modes of transportation, specifically auto, bus (Megabus, Coach USA, Greyhound, and Adirondack Trailways), direct air service (US Air and JetBlue), and rail (Amtrak and New York Metropolitan Transportation Authority (MTA) Metro North Railway (MNR)). The following is a full description of each mode within the network. See Exhibit B-8 for the relationship of rail stations, bus and airport locations.

2.2.1 Auto Network

The primary vehicular corridor running along the Empire Corridor can be broken down into three major segments, all part of the New York State Thruway: Interstate 87 North from New York City to Albany (approximately 160 miles), Interstate 90 West from Albany to Buffalo (approximately 293 miles) and Interstate 190 from Buffalo to Niagara Falls (approximately 21 miles). These three segments are primarily two lane highways (in each direction) with some three-lane segments in some of the urban areas. All of these segments are part of the 570 mile long system of limited access highways located within the State of New York and operated by the New York State Thruway Authority.

The Thruway segment from the New York City line at Yonkers through Buffalo is a tolled road. The tolling is accomplished through a ticketed system where both an EZ Pass transaction occurs as one enters and exits from the Thruway or a ticket is given and collected at the entry and exit points. The availability of this toll data facilitates the analysis of travel patterns and the building of a dependable origin and destination database.

¹⁵ Woods and Poole 2009.

2.2.2 Bus Network

Nonstop bus service exists between all the major cities along the corridor, and is provided by three major carriers: Adirondack Trailways (which also includes Pine Hill Trailways and New York Trailways), Greyhound and Mega Bus. Adirondack Trailways is the predominant carrier followed by Greyhound. Exhibit B-8, provides the location of the major bus stations serving major markets/MPO's along the Corridor.

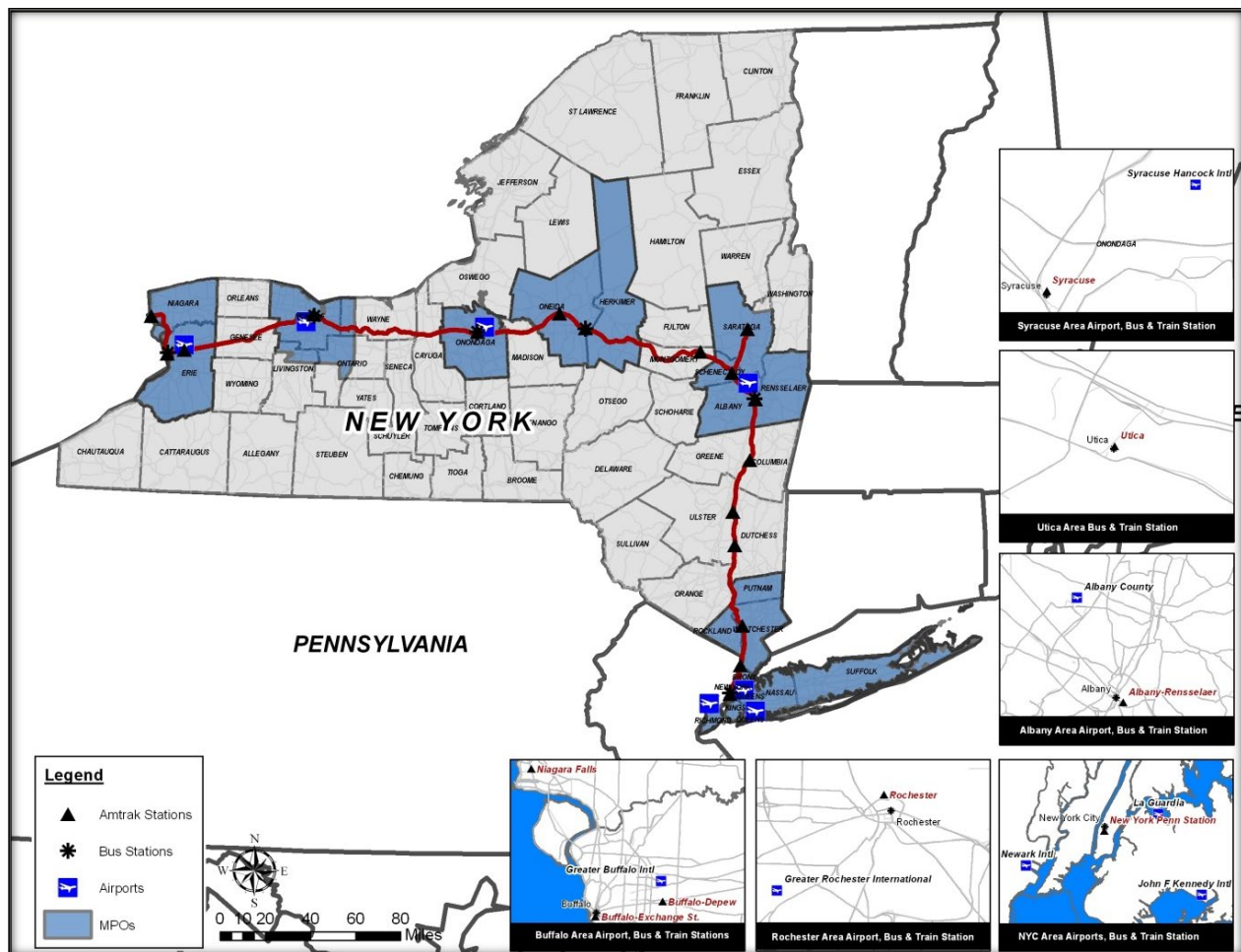


Exhibit B-8: Empire Corridor Station, Bus and Airport Locations

2.2.3 Air Network

This corridor is served by ten commercial service airports from Niagara Falls to Newark. Specifically these include: Niagara Falls International, Buffalo-Niagara International, Greater Rochester International, Syracuse-Hancock International, Albany International, Stewart International, Westchester County, LaGuardia, John F Kennedy International, and Newark Liberty International. Although Newark Liberty International is outside New York State, it serves a significant segment of the New York metropolitan population and has significantly high numbers of passengers traveling to or from upstate cities such as Albany, Buffalo, Rochester and Syracuse. With relatively quick access from New York City via NJ Transit and Air Train, air passengers using the Newark Liberty International are assumed to be a part of the potential market for high speed rail service. If high speed rail does prove to be competitive with air travel, there is a high likelihood of a shift in some riders preferred mode of travel from Newark Liberty International to upstate destinations over to Empire Corridor HSR service for those trips.

2.2.4 Rail Network

The Empire Corridor Rail line (Empire Corridor) runs parallel to the vehicular New York State Thruway Corridor. This corridor, like the road network, consists of two discreet sections- New York City to Albany and Albany to Buffalo. Amtrak provides intercity service between New York Penn Station and Niagara Falls, NY, with stops in Yonkers, Croton-Harmon, Poughkeepsie, Rhinecliff-Kingston, Hudson (connection to Lake Shore Limited to Boston), Albany-Rensselaer, Schenectady (Adirondack and Ethan Allen Express to Montreal, Canada and Rutland, VT), Amsterdam, Utica, Rome, Syracuse, Rochester, Buffalo-Depew, and Buffalo Exchange. Metropolitan Transportation Authority Metro North Railroad commuter service also runs along this corridor, from NYC to Poughkeepsie.

3.0 Socioeconomic Conditions and Projections

3.1 Overview

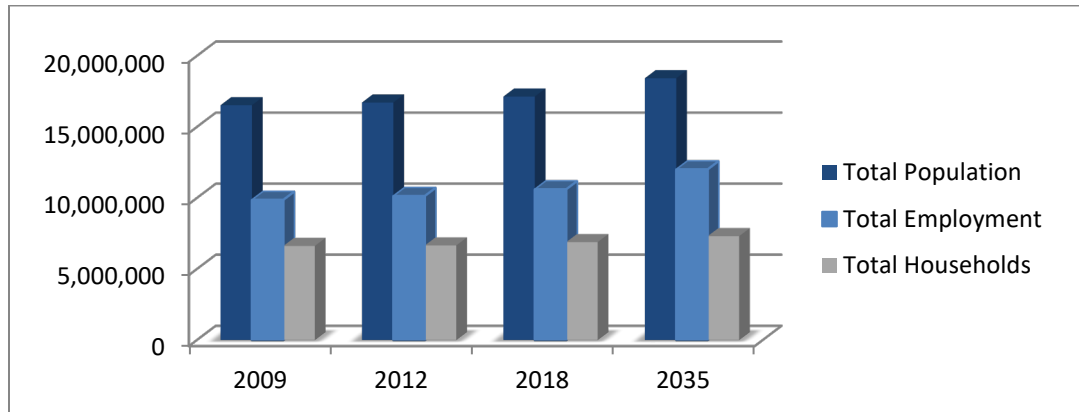
Travel characteristics in any area are strongly influenced by socio-economic conditions, principally population, households and employment. There is a direct correlation between these three factors and regional travel characteristics with the foundational premise of larger numbers of people, households and jobs will result in more trips. While there are many other socioeconomic factors to consider for the Tier 1 EIS, for the purposes of the demand management model, these are the three primary factors; therefore this section analyzes trend lines from 2009 through 2035 for population, households and employment for each of the major population centers along the Empire Corridor. Each of the 17 Empire Corridor stations is located in one of the nine metropolitan statistical areas (MSA's) located along the Empire Corridor. Metropolitan Statistical areas, as defined by the United State Office of Management and Budget (OMB), include at least one city with 50,000 or more inhabitants, or an urbanized area (of at least 50,000 inhabitants), and a total metropolitan population of at least 100,000. Each MSA has its own metropolitan planning organization as decreed by federal law. Since the ridership will primarily be drawn from these nine metropolitan areas, this travel demand forecasting study used the MPO unit as the basis for socioeconomic measurement. The following is a review of socioeconomic conditions both individually and compositely within each of the nine MPO's.

3.1.1 MPO Composite Conditions

Based on Woods and Poole¹⁶ analysis, the nine MPOs have a total 2009 population of 16,522,063, or 85 percent of the entire 2009 NYS population of 19,541,453. By 2035, the population of these nine MPOs is expected to increase 12 percent, to 18,423,566, while the population of the entire state is expected to increase by 11 percent to 21,643,032, keeping these nine MPOs at 85 percent of the entire 2035 projected NYS population.

As of 2009, the nine MPOs along the corridor encompassed 90 percent of New York State's entire employment base, or 9,866,842 of the State's 10,950,869 employed population. The MPOs' employment is expected to increase, 22 percent by 2035 to 12,011,541, thereby continuing to constitute 90 percent of the State's total 2035 projected employment of 13,286,923.

¹⁶ Woods & Poole Woods & Poole Economics, Inc. is an independent firm that specializes in long-term county economic and demographic projections. County projections are updated annually and utilize county models that take into account specific local conditions based on historical data from 1969 to 2008 (1969 to 2009 for population); all data from 2009 to 2040 (2010 to 2040 for population) is projected. One key aspect of Woods & Poole projections is that the economies of counties are linked together: projected economic conditions in one county are reflected in the projected economic conditions in other counties. County population growth is a function of both projected natural increase and migration due to economic conditions. <http://www.woodsandpoole.com/>

Exhibit B-9: Composite Socioeconomic Conditions of the Empire Corridor MPO's

The 9 MPOs also comprised 88 percent of the state's households, or 6,617,257 of 7,471,503 total households in 2009. By 2035, it is projected that the nine MPOs will consist of 7,307,986 households (11% growth), thereby maintaining a fairly consistent proportion of the State's total household population (8,208,957) at 89 percent. See Exhibit B-9.

As seen in Exhibits B-11 – B-16, as a whole the southern corridor will continue to experience increases in population, employment and households anchored by New York City, while the western portion of the corridor from Albany to Niagara Falls, as shown in Exhibits B-16-B-20, will continue to feel the effects of a static or slowly declining population. These projected figures do not take into account any changes in public policy and infrastructure investments, such as HSIPR, which can potentially change the population and employment outlook for the western corridor.

Employment, as shown in Exhibit B-11, will increase the most both percentage-wise and in actual gains along the southern corridor. The greatest percentage gains will be in Orange and Putnam counties, as these counties are located on the fringe of the most populous region New York Metropolitan Transportation Council region (NYMTC). In contrast, counties along the corridor such as Wyoming, Genesee, Onondaga, Oneida, Herkimer, Montgomery, and Albany are expected to experience slight declines in population. All counties are expected to see an increase in employment with Oneida County expecting the biggest percent increase, despite its small population decline. The employment, population, as well as household growth projections are presented in further detail within this section.

Exhibit B-10: Projected Population Growth by County

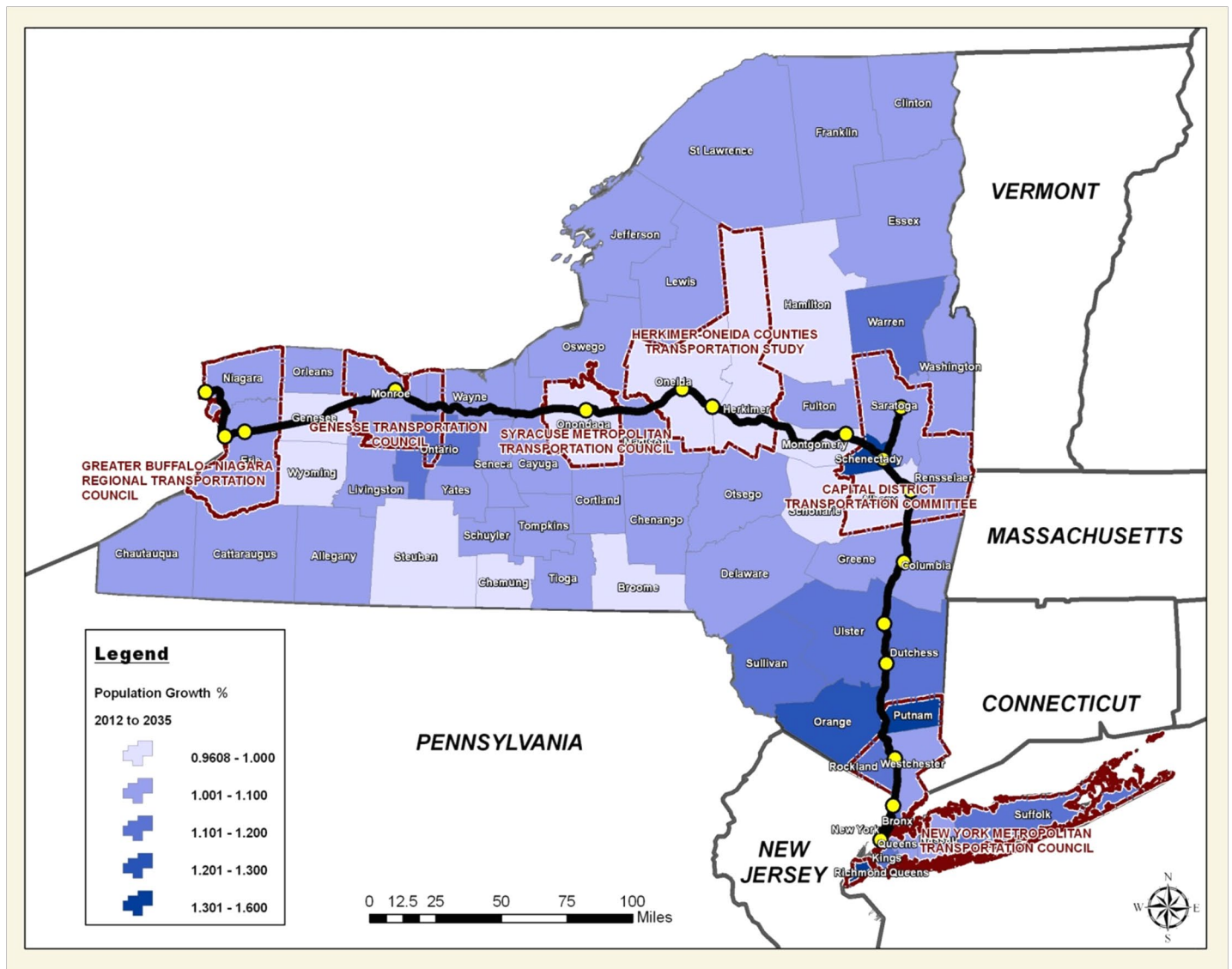
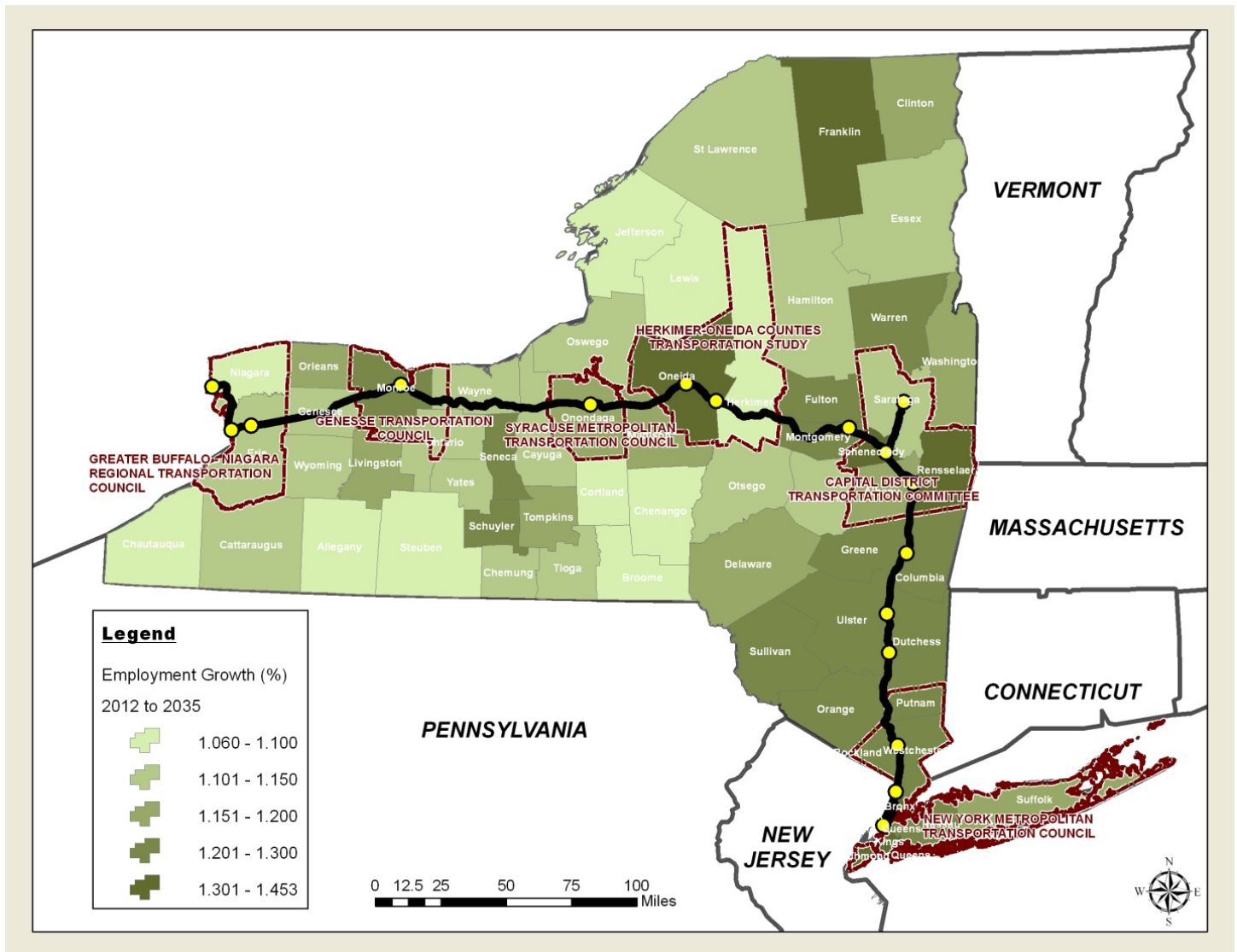


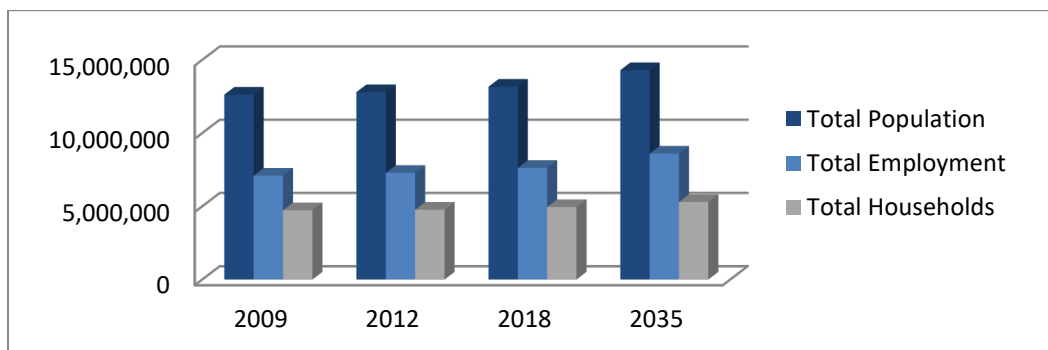
Exhibit B-11: Projected Employment Growth by County



New York Metropolitan Transportation Council

The New York Metropolitan Transportation Council (NYMTC) is the largest metropolitan statistical area (MSA) in not only New York, but in the United States. NYMTC is a ten County Region with a 2009 population of 12,623,185. As shown in Exhibit B-12, the NYMTC region population is expected to increase 13 percent by 2035, bringing the population to 14,291,537, and households are expected to similarly increase by 12 percent from 4,729,433 to 5,291,248. The regional employment is projected to increase by 21 percent over the same time frame from 7,090,526 to 8,595,125.

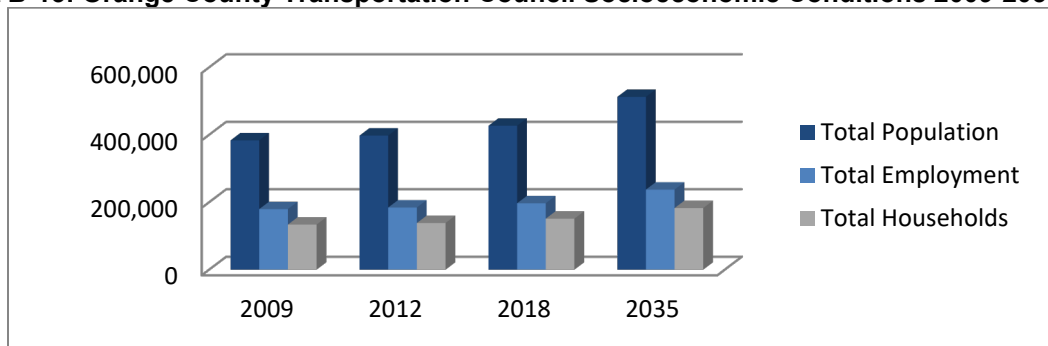
Exhibit B-12: NYMTC Socioeconomic Conditions 2009-2035



Orange County Transportation Council OCTC

Adjacent to the northwest corner of the NYMTC region, Orange County is one of the fastest growing counties in the State, as exhibited by all three socioeconomic factors in this study and shown in Exhibit B-13. From 2009 to 2035, population is expected to increase by 34 percent, from 383,532 to 512,458; households by 37 percent, from 133,754 to 182,683; and employment by 32 percent from 179,629 to 237,400.

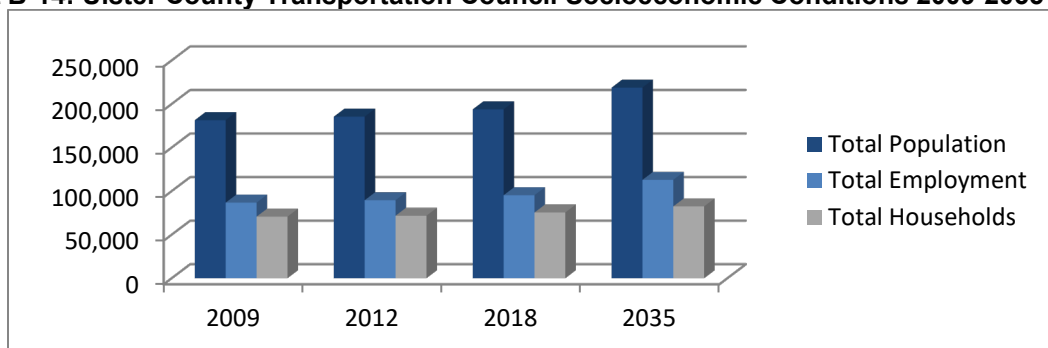
Exhibit B-13: Orange County Transportation Council Socioeconomic Conditions 2009-2035



Ulster County Transportation Council (UCTC)

As is typical of the southern Empire Corridor, the UCTC region has positive growth in all three socioeconomic areas throughout the study time frame of 2009 to 2035. Population is expected to increase by 21 percent from 181,440 to 218,775; households by 17 percent from 70,722 to 82,469; and employment 30 percent from 86,783 to 112,913.

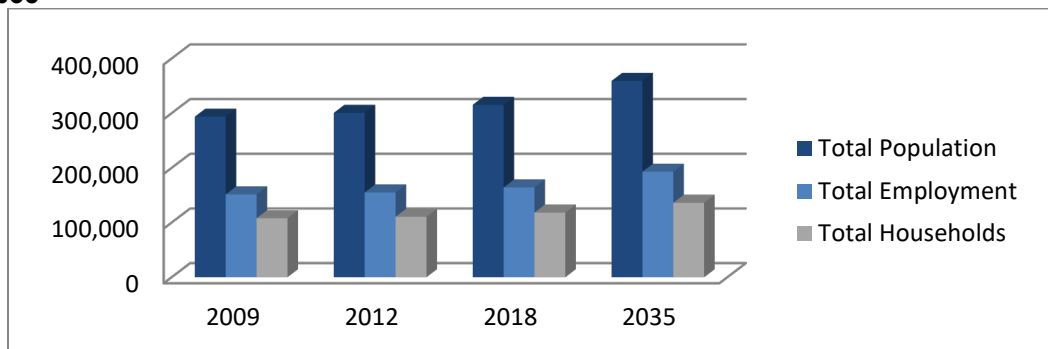
Exhibit B-14: Ulster County Transportation Council Socioeconomic Conditions 2009-2035



Poughkeepsie-Dutchess County Transportation Council (PDCTC)

Bordering the northeast edge of the NYMTC region, PDCTC, as shown in Exhibit B-15, is anticipated to see a 22 percent growth in population from 293,562 to 358,964; a 26 percent increase in households from 107,892 to 136,059; and a 27 percent increase in employment from 151,379 to 192,940 from 2009 – 2035.

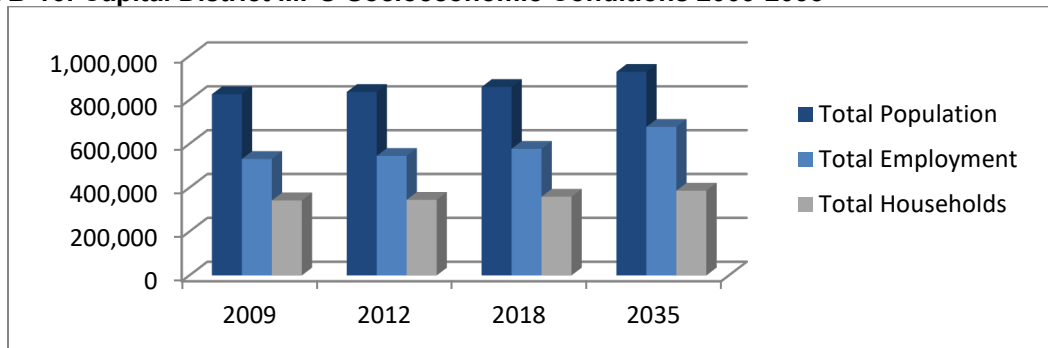
Exhibit B-15: Poughkeepsie-Dutchess County Transportation Council Socioeconomic Conditions 2009-2035



Capital District Transportation Committee

This Capital District region marks the turning point between the Western and Southern Empire Corridors, and its employment characteristics are indicative of its varied nature. As the State Capital, this regions workforce is characterized by a high number of state employees, but also maintains a strong manufacturing and agricultural population. As shown in Exhibit B-16, total population and employment is forecasted to increase from 2018 through 2035.

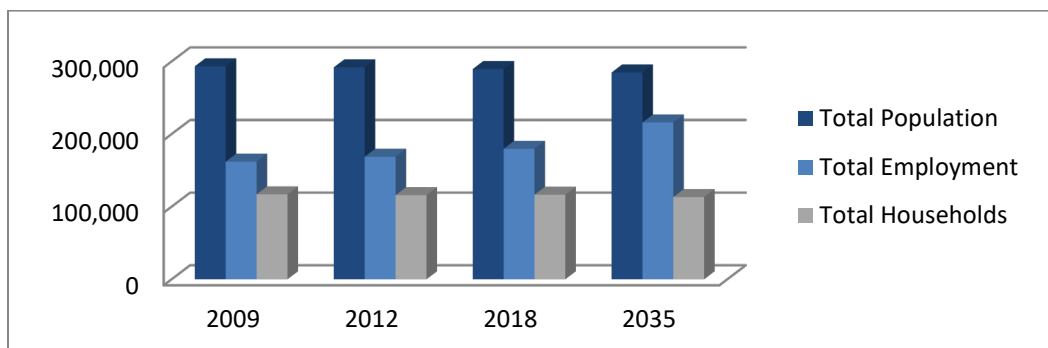
Exhibit B-16: Capital District MPO Socioeconomic Conditions 2009-2035



Herkimer-Oneida Counties Transportation Study (HOCTS)

As the first MPO west of Albany, this region, typical of the western corridor, is expected to experience a continued slow population decline. The 2009 population was 293,280 and the projected 2035 population 284,730, a change of 3 percent. Households are also expected to decline by 3 percent from 116,895 to 113,224. Conversely, as shown in Exhibit B-17, total employment is expected to increase by 33 percent which indicates the potential for a positive increase in travel demand despite the declining population.

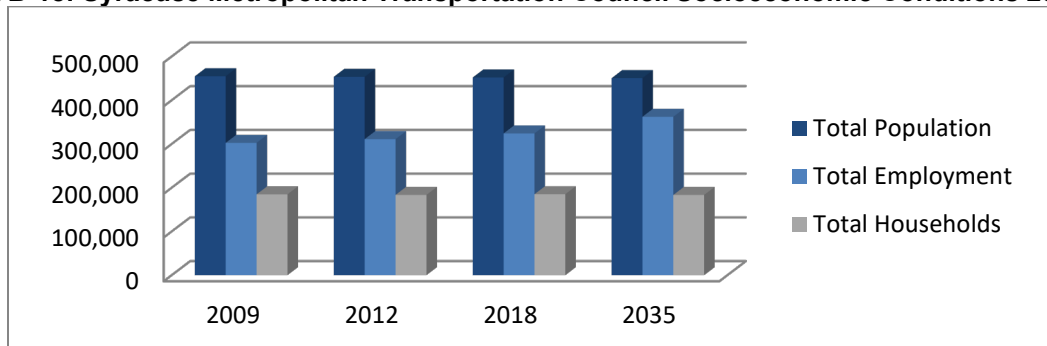
Exhibit B-17: Herkimer-Oneida Counties Transportation Study Socioeconomic Conditions 2009-2035



Syracuse Metropolitan Transportation Council (SMTC)

The SMTC region is experiencing a slowly declining population, and a shift away from the city core to suburban/rural areas. As shown in Exhibit B-18 the region had a 2009 population of 454,753 which is expected to experience a slight 1 percent decline to 450,453 by 2035, as are households from 184,872 to 183,456 in the same period. Like much of the western corridor, this region is expected to experience a large, 20 percent, increase in the employment base, from 302,466 in 2009 to 362,124 in 2035.

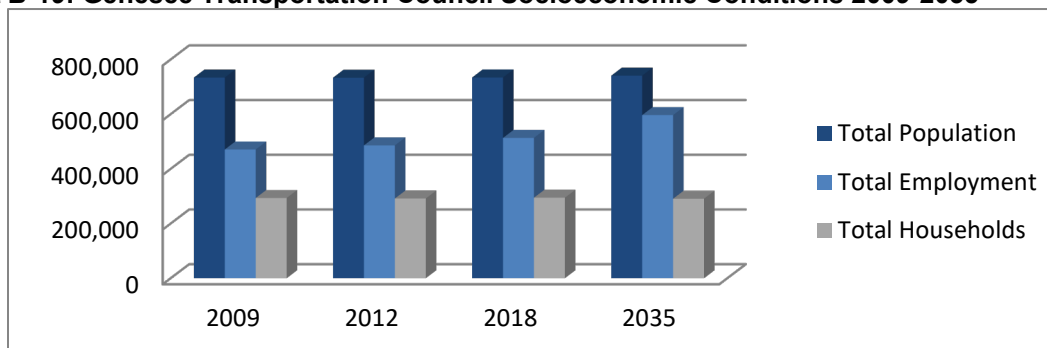
Exhibit B-18: Syracuse Metropolitan Transportation Council Socioeconomic Conditions 2009-2035



Genesee Transportation Council (GTC)

Despite being home to Rochester, the second largest city in New York State, the GTC region is anticipated to have slight 1 percent population and household decline over the 26 year period of 2009 to 2035, from 733,703 to 740,769 and 293,220 to 290,808, respectively as shown in Exhibit B-19. Employment projections are consistent with the projected western corridor trend as a whole, increasing 27 percent from 470,600 to 596,481.

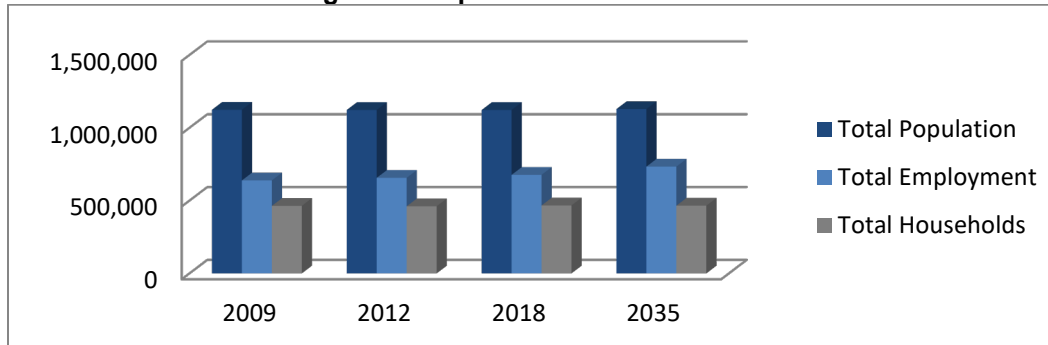
Exhibit B-19: Genesee Transportation Council Socioeconomic Conditions 2009-2035



Greater Buffalo-Niagara Transportation Council (GBNTC)

Although the GBNTC region has been experiencing a major population decline over the past two decades, this trend is expected to change, with a slight (.01%) projected population and household increase of 1,123,804 to 1,128,588 and 463,671 to 465,259, respectively from 2009-2035 as shown in Exhibit B-20. Employment is also expected to increase by 15 percent over the same time frame.

Exhibit B-20: Greater Buffalo-Niagara Transportation Council Socioeconomic Conditions 2009-2035



3.2 Population Density Dispersion in Relation to Station Location

Population density is a critical factor in the success of public transit. Over 4,000 people per square mile (sq.mi) are considered transit supportive.¹⁷ The density of Empire Corridor cities should be considered in planning for the corridor. As presented in Exhibit B-21, within each region, the population is most heavily distributed around each of the urban areas, as compared to the non-urbanized and rural areas of the State. The population density for each of the major markets is reviewed in the following section.

3.2.1 Buffalo-Niagara Falls Metropolitan Region

The Buffalo-Niagara Falls Metropolitan region consists of three station locations. With a population density of 1,583 p/sq. mi. within a 5 mi radius, and 740 p/sq. mi. within a 10 mile radius, Niagara Falls Station is currently not in a high-density area, nor is it well connected to the central business district (CBD) and tourism locations of Niagara Falls. Buffalo Exchange has a population density of 1,493 p/sq. mi. and 14,692 p/sq. mi., using a 5 and 10 mile radius, respectively. The low 5 mile radius density is due to its location on the waterfront, therefore the 10 mile radius is a better indicator of density in this instance. This station is well connected to other modes of public transit, located in a dense area and is near the heart of the CBD. Buffalo Depew has a 5 mile radius population density of 9,425 p/sq. mi. but a 10 mile radius population density of only 747 p/sq. mi. This station is located on the boundary of the lower density suburban market and also lacks strong transit connections. Exhibit B-22 details the Station locations and the population dispersion for these three station locations.

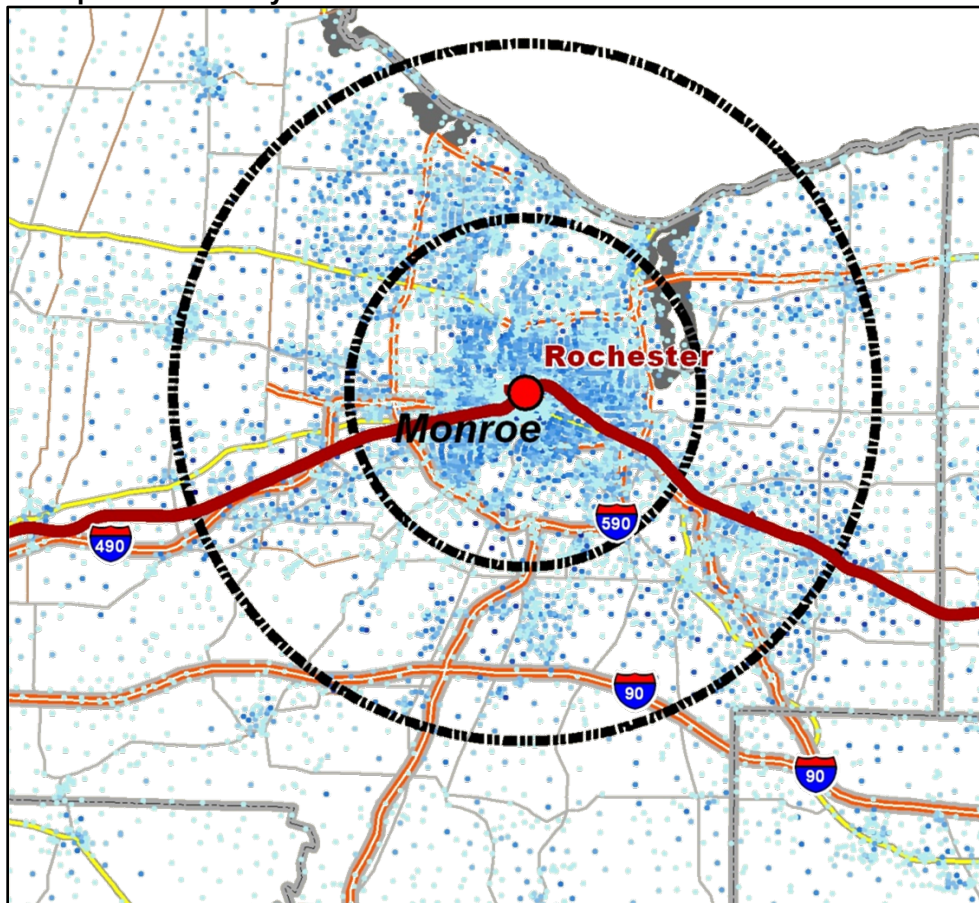
¹⁷ Federal Transit Administration: Guidelines and Standards for Assessing Transit Supportive Land Use, May 2004

The map displays the proposed high-speed rail corridor across New York State. The route begins in Buffalo, travels east through Rochester and Syracuse, then south through Albany and New York City. Key locations marked along the route include Niagara Falls, Buffalo, Rochester, Syracuse, Albany, New York City, and Long Beach. The map also shows the state's county boundaries and names, as well as its neighbors: Vermont to the north, Massachusetts to the east, Connecticut to the southeast, New Jersey to the south, and Pennsylvania to the west. A scale bar indicates distances up to 100 miles, and a compass rose shows the cardinal directions.

3.2.2 Rochester Metropolitan Region

As shown in Exhibit B-23, Rochester station has a density of 8,255 p/sq. mi., which is highly transit supportive. The station is also well-located in the densest portion of downtown Rochester near educational, tourist, institutional and business land uses and attractions.

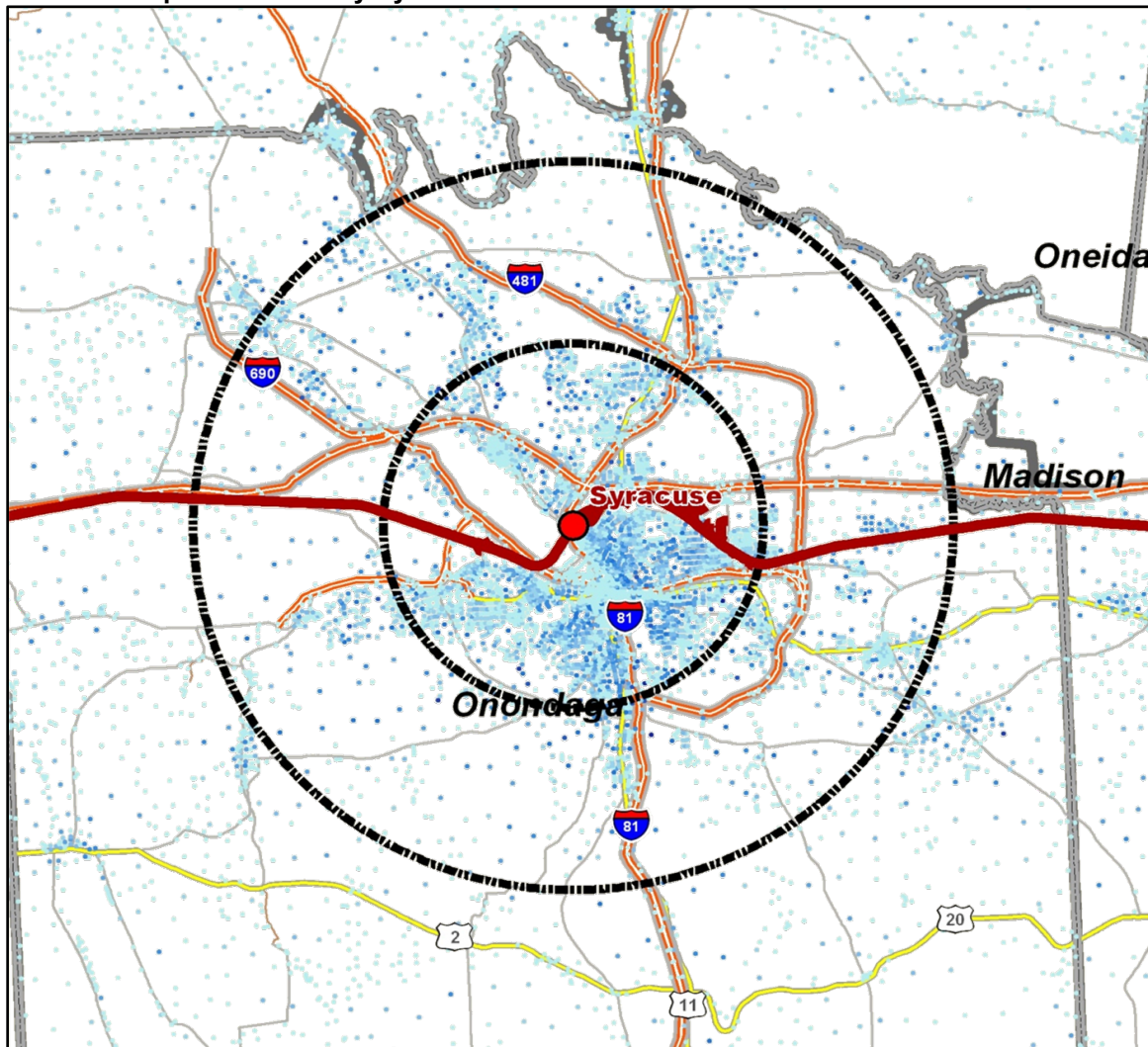
Exhibit B-23: Population Density Rochester



3.2.3 Syracuse Metropolitan Region

Located on the urban fringe, and with a population density of 3,551 p/sq. mi., the Syracuse station as shown in Exhibit B-24, lacks the necessary density to be fully transit supportive. In general, the Syracuse urban area is much dispersed, and has extremely low-density land uses immediately surrounding the station.

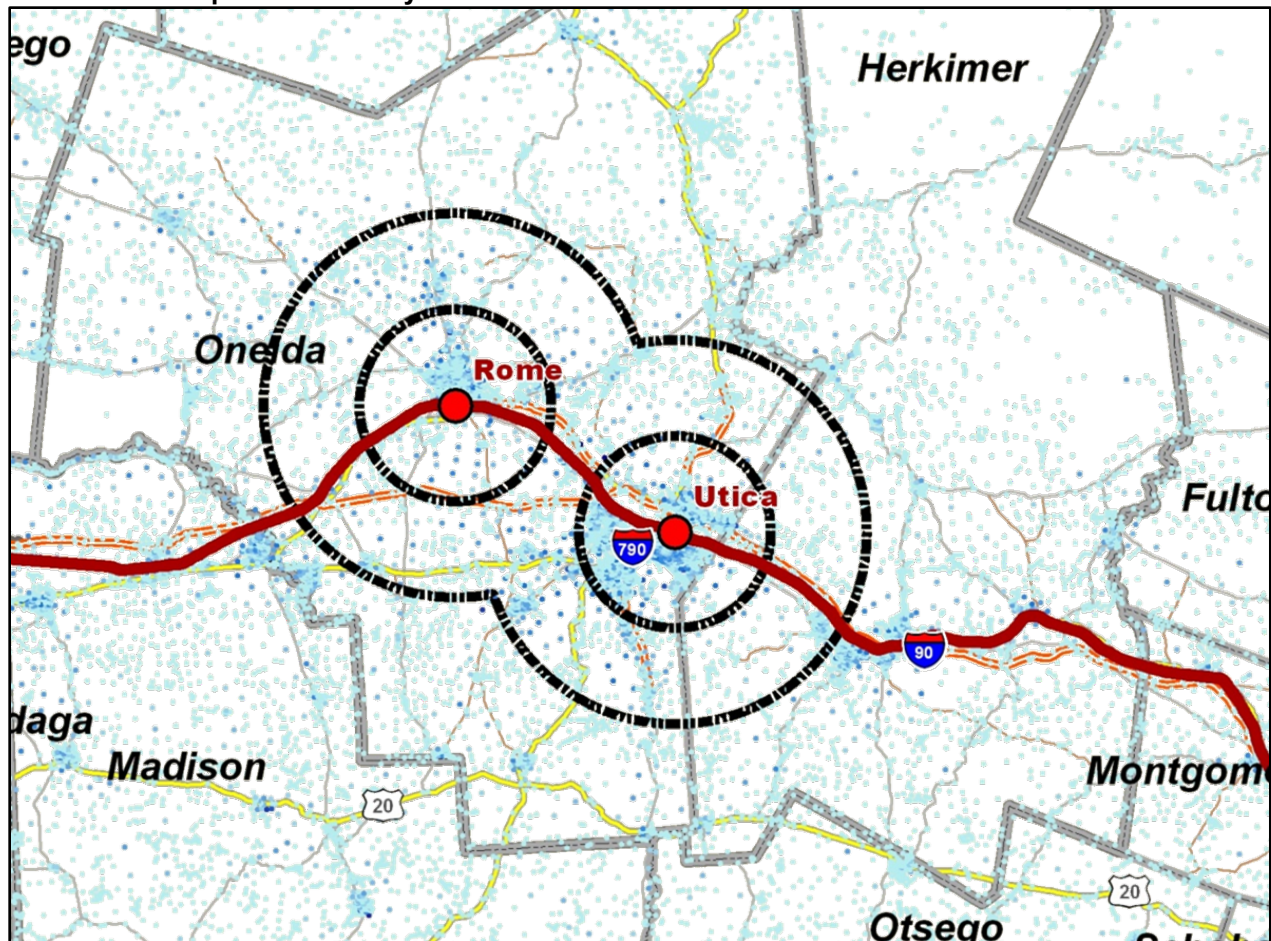
Exhibit B-24: Population Density Syracuse



3.2.4 Utica Metropolitan Region

With a 5 mile population density of 1,241 p/sq. mi. and a 10 mile density of 455 p/sq. mi., the Utica station, as shown in Exhibit B-25, lacks the strong density required for successful transit. While the station has opportunities to attract ridership, as it is located in the central business district, near tourist, institutional and business attractions, it also lacks the transit connections to easily bring riders from other parts of the city. Rome Station is located in a low-density area, only 78 p/sq. mi. with a five-mile radius and 314 p/sq. mi. within 10 miles. Rome station is far from the central business district and supportive land uses. Additionally, there are no local transit connections between the station and downtown Rome.

Exhibit B-25: Population Density Utica

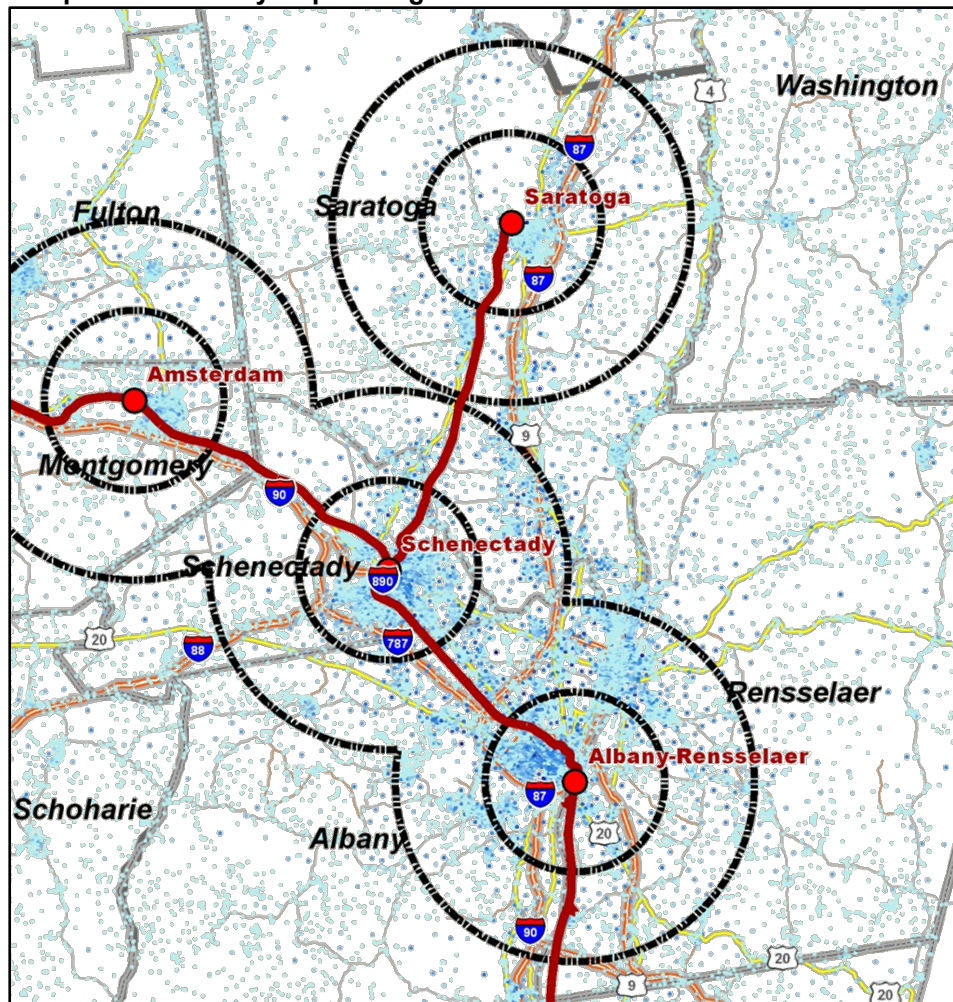


Source of Data: US Census 2000

3.2.5 Capital Region

The Capital Region is home to three stations as shown in Exhibit B-26. Schenectady is the only station in this region located within its city's central business district. Although the station location is in the heart of the CBD, its surrounding population density is only 1,723 p/sq. mi. within a 5 mile radius. The area around Albany station significantly lacks transit supportive density, with a population of 1,924 p/sq. mi. The station is also located on the fringe of the City, but has local bus connections to the by transit to the greater region. Similarly, Saratoga station is not located in the Saratoga Springs CBD, and has a low density, 563 p/sq. mi., within a 5 mile radius. Bus service links the station to the CBD.

Exhibit B-26: Population Density Capital Region

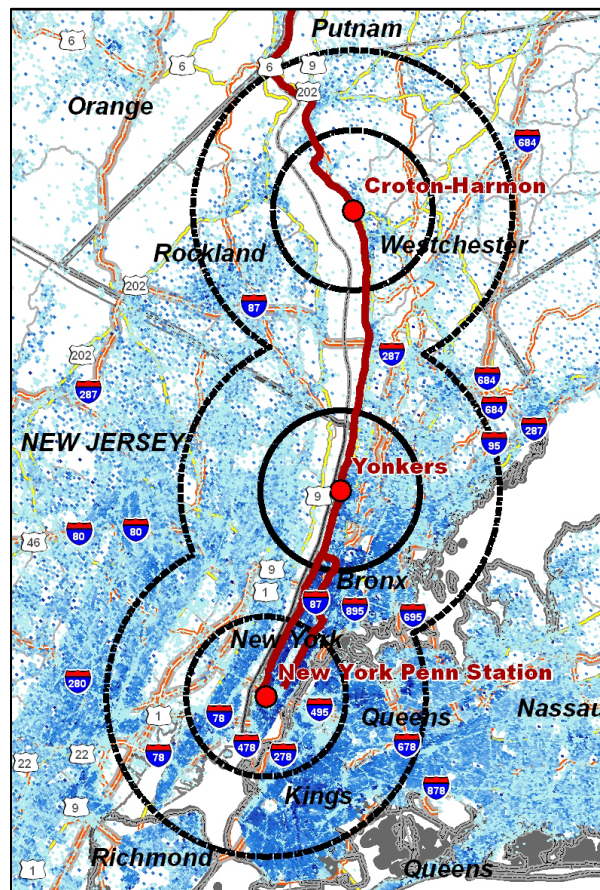


Source of Data: US Census 2000

3.2.6 New York City Region

The NYC or NYMTC MPO region consists of three stations each with highly different densities that are a by-product of the very different context of each station. NY Penn station has a population density perhaps like no other train station with over 43,000 p/sq. mi within 5 miles and 23,500 p/sq. mi within 10 miles, while Yonkers, an inner-ring suburb of NYC has a density of just under 10,000 p/sq. mi within 5 miles and 7,734 p/sq. mi within 10 miles. Croton Harmon, by contrast is a true suburban station with under 750 p/sq. mi within 5 miles and an actual increase in density in a 10 mile radius – at 1050 p/sq.. Each station serves an important and differing purpose – NY Penn Station is the mega-station that draws in riders regionally and locally - its density and destination oriented location drives the Empire Corridor, Yonkers connects the high density inner-ring suburbs to the Empire Corridor – allowing patrons to access Amtrak without having to head into NYC. Croton Harmon serves a similar purpose as Yonkers except it is a catchment area for a larger region of outer-ring rural and small town markets – much as it is for MTA-Metro North. Although Croton Harmon does not have transit supportive density – it is strategically located to capture the more dispersed exurban market that would otherwise bypass rail as a travel option and drive to destinations on the Empire Corridor.

Exhibit B-27: Population Density New York City Region



4.0 Existing Travel Market Conditions

4.1 Overview

The Empire Corridor can be distinctly split up into two discreet sections, New York City (NYC) to Albany, referred to as the “southern corridor,” and Albany to Buffalo, referred to as the “western corridor.” The following section describes the overall corridor or overall potential market – which includes the entire area of the NYS Thruway and all Amtrak Stations along the Empire Corridor.

Due to the complexity and extent of data produced for the 17 individual station markets and 15 paired markets, this substantive forecast and comparative mode evaluations focuses on what are referred to as major markets. Further, the section evaluates the collective travel modes present in what are identified as major markets along the Empire Corridor. Major market areas are defined by MPO geographies in the region. Only those station areas subject to significant changes in travel speed, service, and reliability were included in the major markets corridor summary.

Exhibit B-28

Mode	Trips (single person)	Share
Car	210,977,488	96.21%
Rail	1,298,706	0.59%
Bus	4,593,637	2.09%
Air	2,411,033	1.10%
Total	219,280,865	100.00%

Source: Adirondack Trailways, Amtrak, Bureau of Transportation Statistics, Greyhound, Megabus, NYSDOT, New York State Thruway Authority.

4.2 Total Corridor – All Markets

Exhibit B-29

Mode	Single Trips	Share
Car	28,973,177	79%
Air	2,337,801	6%
Bus	4,591,544	12%
Rail	932,801	3%
Total	36,835,323	100%

Source: Adirondack Trailways, Amtrak, Bureau of Transportation Statistics, Greyhound, Megabus, NYSDOT, New York State Thruway Authority.

When considering the entire corridor, as shown in Exhibit B-28, composed of all of the origin and destination pairs present on the travel corridor - accessible by train or an alternative travel mode, there is a total single passenger – one way trip market of 219,280,865. The vast majority of this market is served by automobile. This is the total market in which rail competes and from which an improved Empire Corridor rail service will draw additional passengers. Bus and air followed behind auto with 4.6 and 2.4 million trips, respectively. Rail ridership had the lowest market share of trips. Ridership peaked in 2000 at over 1.26 million, but

hit a low point of 1.04 million riders in 2002. This decline can be attributed to the introduction of JetBlue air service from Buffalo in 2001. Since that time, ridership has increased from 1.08 million riders in 2003 to 1.14 million riders in 2004, up to 1.3 million riders in 2009. Most significantly, intercity passenger rail ridership increased 23 percent between Albany-Rensselaer and Niagara Falls from 2007 - 2008.

4.3 Total Corridor – Major Markets

Six cities along the corridor, New York City, Albany, Utica, Syracuse, Rochester and Buffalo will provide the major market for Empire Corridor HSIPR service. Each one of these markets travel mode catchment area has been assigned to its MPO geography for evaluation purposes. All corridor level data that was collected was eventually broken down to city pair level, for a total of 15 city pairs (i.e., New York to Albany, New York to Utica, Albany to Utica, Albany to Rochester) to establish this relationship between the cities and have an understanding of the dynamics between the city pairs. The following is a review of the existing travel market conditions for the 15 major market city pairs.

Exhibit B-30		
Region	MPO	Single Trips
NYC	NYMTC	4,890,413
Albany	CDTC	5,196,121
Utica	HOCTS	4,489,598
Syracuse	SMTC	6,212,671
Rochester	GTC	7,564,654
Buffalo	GBNRTC	7,236,248
Total		35,589,708
<i>Source: Adirondack Trailways, Amtrak, Bureau of Transportation Statistics, Greyhound, Megabus, NYSDOT, New York State Thruway Authority.</i>		

4.4 Existing Conditions: Major Markets

Auto travel remains the primary mode of travel along the Empire Corridor. When considering those exits on the Thruway most closely associated with Amtrak rail station locations, auto trips constitute over 79 percent of trips, as shown in Exhibit B-29, followed by bus, air and then rail. Rail has the lowest market share with fewer than 3 percent of all trips. In 2009, the total trip market (one-way person rides) for the Empire Corridor Major Markets for all four modes was approximately 35.6 million trips see Exhibit B-31.

Exhibit B-31: 2009 Empire Corridor Total Trips for Major Market Pairs							
Origin/ Destination	NYC	Albany	Utica	Syracuse	Rochester	Buffalo	Total
NYC	0	2,745,433	284,700	485,258	480,989	876,594	4,872,974
Albany	2,762,873	103	1,213,094	636,423	370,918	330,454	5,313,864
Utica	284,700	1,149,395	0	2,373,015	379,762	239,028	4,425,899
Syracuse	485,258	610,114	2,373,015	0	1,630,386	1,087,591	6,186,364
Rochester	480,989	360,812	379,762	1,630,386	21	4,702,578	7,554,548
Buffalo	876,594	330,265	239,028	1,087,591	4,702,578	5	7,236,059
Total	4,890,413	5,196,121	4,489,599	6,212,672	7,564,655	7,236,248	35,589,708
<i>Source: Adirondack Trailways, Amtrak, Bureau of Transportation Statistics, Greyhound, Megabus, NYSDOT, New York State Thruway Authority.</i>							

The greatest number of total trips was made from Rochester to Buffalo, with over 4.7 million trips or over 60 percent of their respective transportation markets. Rochester is the most frequent origin and destination on the Empire Corridor. All of the Cities on the western corridor show solid travel markets between the various markets. This indicates a positive opportunity for HSIPR service, given to enhance the strongly linked markets anchored by medium sized cities. Discretionary choice riders will ride convenient, reliable transit service.

4.4.1 Existing Conditions: Auto

As shown in Exhibit B-28, if considering the Thruway traffic that runs the entire length of the empire corridor, 96 percent, of total Empire Corridor area trips are made by auto. However, when looking at travel between the major market pairs currently served by rail, the potential auto travel market that enhanced rail ridership services would compete with as shown in Exhibit B-32 is 29 million trips or 81 percent of the total potential travel market between the major market cities in 2009. Rochester and Buffalo have the greatest number of automobile trips with over six million trips originating out of each market. This represents the vast majority of travel for these city pairs, as 74 percent of all trips between New York and Albany and 95 percent between Buffalo and Rochester were made by auto. Public transit modes have difficulty in competing with auto, especially between city pairs in close proximity, as there is no need for the traveler to consider schedule, frequency or transit connections.

An analysis of Exhibits B-31 and B-32 indicates that only 5 percent of trips between NYC-Buffalo were

Exhibit B-32: 2009 Empire Corridor Auto Trips by Major Market Pairs							
Origin/ Destination	NYC	Albany	Utica	Syracuse	Rochester	Buffalo	Total
NYC	0	2,019,534	134,243	3,584	25,380	45,129	2,227,869
Albany	2,034,748	0	1,176,909	588,846	325,229	261,330	4,387,062
Utica	134,243	1,113,393	0	2,337,782	361,967	209,413	4,156,797
Syracuse	3,584	562,538	2,337,782	0	1,549,870	929,718	5,383,491
Rochester	25,380	315,125	361,967	1,549,870	0	4,559,912	6,812,253
Buffalo	45,129	261,534	209,413	929,718	4,559,912	0	6,005,705
Total	2,243,084	4,272,123	4,220,313	5,409,799	6,822,357	6,005,501	28,973,177
<i>Source: New York State Thruway Authority, Citilabs</i>							

made by car, as compared to 76 percent from Albany-Buffalo. As the following sections on air, train and bus will show this is due to a combination of factors including the variation in frequency of transit service between these destinations, as well as time and cost.

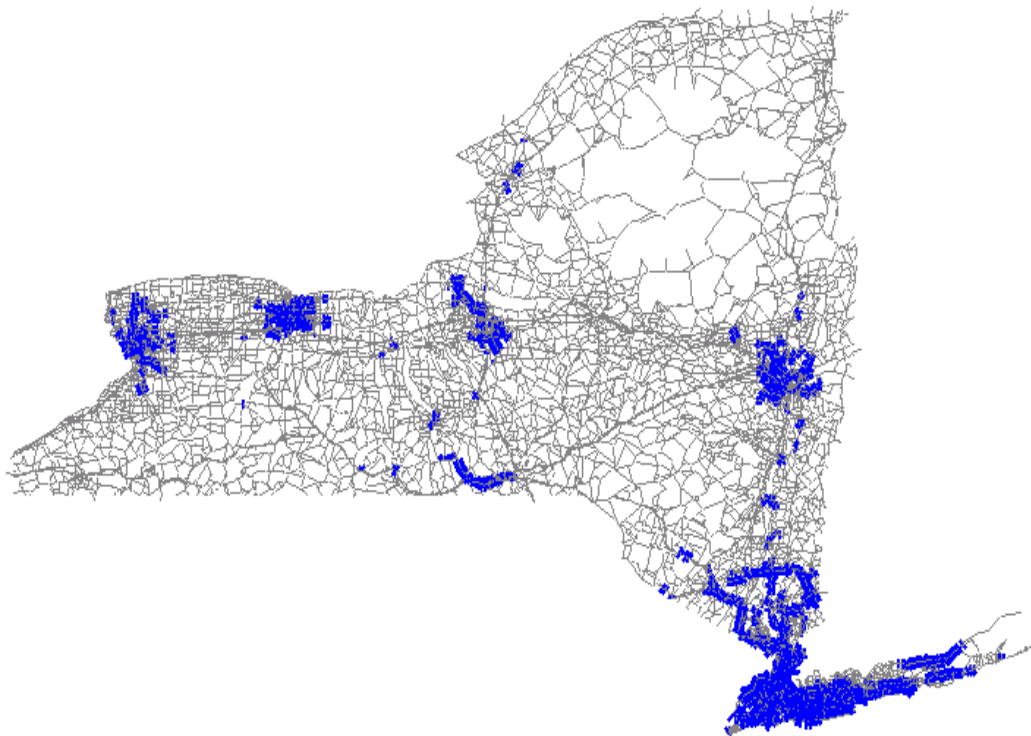
Auto Trips – Travel Mode Characteristics

For purposes of evaluating the automobile market, several key variables were identified and used to define the various travel characteristics associated with auto travel along the corridor. There are two key characteristics associated with auto selection as the preferred mode of travel, travel time and cost. Travel time is a product of congestion and distance between origin and destination and an assumed average speed.

Auto Trips – Congestion

Currently the NYS Thruway is not a heavily congested corridor. However, the major urban areas on the corridor, including Metro NYC, Albany, Syracuse, Rochester, and Buffalo access areas off Thruway which suffer from various levels of congestion leading to significant delays in auto and bus travel. Congestion is particularly severe in the Metro NYC area – constraining the speed of vehicle trips originating out of the NYMTC MPO. Exhibit B-33 below identifies congestion as identified in the forecast model under the existing conditions for 2009 Am Peak. The Exhibit is based on VC ratios or vehicle congestion as factored by the percentage of utilization of a road segment based on its classification and percentage utilization of carrying capacity based on the roads total of lanes and speed limits. Exhibit B-33 below shows those road segments in blue that have a VC ratio of .85, which translates to a level of service D.

Exhibit B-33: AM Peak Congestion 2009



Auto Trips – Cost Factors

Cost, although a seemingly straightforward variable, is actually a complex variable – that is based on the differential value of time based on trip purpose. Exhibit B-34 below identifies some of the key components used for factoring trips and travel costs for auto use. In this study, a perceived value of operating a passenger vehicle was calculated at 16.7 cents.¹⁸ Although national standards put the actual cost of operating a vehicle at approximately 55 cents a mile, users generally do not perceive this cost when considering what travel mode to use from a behavioral standpoint. Further, an average of 1.5¹⁹ occupants per vehicle was used to scale the auto trip market. This is important as the value of the automobile as a travel mode increases as the person loading of a car increases – making it a more cost effective mode of travel compared to ticket prices associated with individual travelers using transit. Finally, for purposes of evaluating cost and time value, the model used to forecast travel mode selection was based on the identification of two types of traveler trip purpose on the corridor, business and non-business users. As the Exhibit shows below, the assumed share of trips for business purposes is 25 percent of the total market²⁰. The difference between the two purposes is important as the value of time for business users is nearly a dollar a minute while only 27 cents for all other trip purposes²¹. This distinction is important as rail, through lowered travel times, attempts to compete for the business market with other – currently faster travel modes. A detailed explanation of trip purpose and value of time is discussed in the directly following section on comparative modes.

Exhibit B-34: Auto Market Input Variables	
Variables	Values
Average Vehicle Operating Cost in Dollars/mile	0.1674
Average Vehicle Occupancy	1.5
Value of time for business purpose trips in Dollars/minute (\$/minute)	0.939
Value of time for all "other" trip purposes in Dollars/minute	0.272
Assumed Share of trips for business purposes	0.25

Exhibit B-35 identifies the modeled cost of Auto trips prior to sensitivity adjustment to time for trip purpose as discussed above. Given the fact that an average automobile carries 1.5 passengers per vehicle, this mode is generally found to be the most cost effective of all modes from a behavioral standpoint – i.e. users consider auto to be the most cost effective of travel options given the length and duration of trips on this corridor. The actual cost of individual vehicle trips is far higher when considering fluctuating and rising fuel prices, wear and tear, insurance, and cost to own in conjunction with secondary or collective cost of vehicle trips such as taxes associated with highway projects, environmental impacts from CO2 and other emissions, as well as opportunity costs associated with lost time associated with travel on congested

¹⁸ The use of .1674 as a the cost of a vehicle mile is the cost as perceived by user as identified in literature review and as used in previous similar travel demand studies.

¹⁹ Average Vehicle Occupancy and assumed share of trips for business purposes: general value based on inspection of NHTS 2001 survey summaries available from <https://www.nysdot.gov/divisions/policy-and-strategy/darb/dai-unit/ttss/2001-nhts>

²⁰ Average Vehicle Occupancy and assumed share of trips for business purposes: general value based on inspection of NHTS 2001 survey summaries available from <https://www.nysdot.gov/divisions/policy-and-strategy/darb/dai-unit/ttss/2001-nhts>

²¹ Value of time for business/other purpose trips: adjusted based upon average income from California HSR model report (Outwater et. al., "California Statewide Model for High-Speed Rail", Journal of choice Modeling, 3(1) 2009, p.75)

roadways for business purposes and commercial carriers.

Exhibit B-35 identifies the modeled cost of Auto trips prior to sensitivity adjustment to time for trip purpose as discussed above. Given the fact that an average automobile carries 1.5 passengers per vehicle, this mode is generally found to be the most cost effective of all modes from a behavioral standpoint – i.e. users consider auto to be the most cost effective of travel options given the length and duration of trips on this corridor. The actual cost of individual vehicle trips is far higher when considering fluctuating and rising fuel prices, wear and tear, insurance, and cost to own in conjunction with secondary or collective cost of vehicle trips such as taxes associated with highway projects, environmental impacts from CO2 and other emissions, as well as opportunity costs associated with lost time associated with travel on congested roadways for business purposes and commercial carriers.

Exhibit B-35: Modeled Cost of Auto Trip by Major Market Pair ²²

O Zone \ D Zone	NYC	Albany	Utica	Syracuse	Rochester	Buffalo
NYC	\$0	\$25	\$40	\$41	\$56	\$66
Albany	\$25	\$0	\$16	\$24	\$38	\$48
Utica	\$40	\$16	\$0	\$9	\$23	\$33
Syracuse	\$41	\$24	\$9	\$0	\$15	\$25
Rochester	\$56	\$38	\$23	\$15	\$0	\$12
Buffalo	\$66	\$48	\$33	\$25	\$12	\$0

Auto Trips – Travel Time²³

Travel times associated with automobiles for the Empire Corridor are subject to congestion and route selection between city pairs. Auto-travel, given the modest level of congestion on most parts of the corridor, is the second fastest form of travel under existing conditions for most parts of the corridor when compared to other modes. Other than air, which does not serve all markets on the corridor, auto has an advantage in travel time in the Empire Corridor versus current bus and rail service as users are able to leave their origin and arrive at destination without the transfer of modes required of public transit users who must select a secondary transport mode before arrival to and departure from origin and destination transit facilities. Exhibit B-36 identifies the total trip time encountered for each major market pair as accessed by automobile.

²² Auto costs include perceived cost of car usage plus toll between major market pairs.

²³ Travel times were derived from Google Maps which takes into account congestion in average speed of vehicle from origin to destination.

Exhibit B-36: Auto Travel Times (in minutes) by Major Market Pair						
O Zone \ D Zone	NYC	Albany	Utica	Syracuse	Rochester	Buffalo
NYC	0	167	253	262	351	413
Albany	170	0	100	147	225	286
Utica	255	98	0	60	137	199
Syracuse	262	147	60	0	93	154
Rochester	351	225	137	93	0	80
Buffalo	413	286	199	154	81	0
<i>Source: Google Maps/ http://maps.google.com/maps?hl=en&tab=wl</i>						

4.5 Auto Trips Data Collection

Auto ridership was created from the travel data obtained from New York State Thruway Authority. The travel data is compiled from the toll transactions (EZ pass and ticketed) that take place at the various entrances / exits to and from the Thruway. To understand the vehicular travel pattern on this corridor, as a first step an auto profile for this corridor was created. This profile is based upon data collected from toll plazas located along the corridor and establishing an origin/ destination (O/D) database for this corridor. The data is based on both kind of transactions – EZ pass based or ticket based. To establish the O/D database Thruway entry and exit numbers were correlated to the destination cities / metropolitan areas and the entry point of the traffic using these specific exits were tabulated to complete the database.

Since the ticketed system of the Thruway ends at the exit 15, the origin destination data obtained from the Thruway does not provide a clear origin or destination of an auto trip going through the toll plaza at exit 15. Hence the data gathered was further disaggregated to the different zones within the NYC metropolitan area with the help of a cube component.

4.5.1 Auto Trips Data Collection Limitations

Although the model utilizes a matrix of 1080 origins to 1080 destination pairs to assign travel for auto – which is the actual market with which rail competes, the complexity of this matrix makes it difficult to show or demonstrate the trip assignment process. To interpret this data, O/D pairs for auto were identified through MPO markets and the Thruway exists within their geographic boundaries. The purpose of this data formatting was to allow readers to understand the competitive markets that rail likely compete within a known or understood geographic framework. Ultimately however, this understates the total market from which the model considers rail to compete – which is the entire state of NY based on a mode choice selection algorithm that considers the likelihood of using rail based on a type of gravity related to the distance of a station from both the origin and destination of the actual trip rather than arbitrarily collecting all auto trips that have origins and destinations within MPO pairs and positing only those pairs as the total market. Ultimately however the MPO geographies are large and likely representative enough of the market to capture a reasonable scenario of the existing auto travel market.

Further, there are various vehicular travel routes between the upstate cities of Syracuse, Rochester, Buffalo and the NYC. Unlike the NYSTA the alternate routes are not tolled and the information about the travel patterns on these routes does not readily exist and the collection of such data would require

increasingly significant dedication of resources to conduct surveys and further analyze the findings of such surveys. Finally, the study could not account for the travel from the three upstate cities utilizing a travel route of which passes through Pennsylvania and New Jersey before entering New York City.

Existing Conditions: Bus

Regional Express Bus has been a growing mode of travel throughout the northeast, and in the case of the Empire Corridor - offering better service, more amenities and a lower travel cost than previous bus services or competing Amtrak service. Bus is expected to continue to compete heavily with rail – and may even degrade rail's share of the transit market in the corridor if no improvements to Amtrak are made. Bus travel is the second most popular mode of travel between major city pairs along the corridor, carrying 12 percent of all trips, as shown in Exhibit B-29. In 2009, there were nearly 4.6 million bus passenger trips on the Empire Corridor. This market size is due to the combination of its low-cost, convenience and frequency. As Exhibit B-37 shows, New York City is the most frequented bus origin/destination on the Empire Corridor, with approximately 1.5 million trips. Buffalo was the second most popular bus origin/destination on the corridor with approximately 872,562 trips. The greatest number of these trips is made along the entire length corridor, from NYC - Buffalo, with over 427,700 trips, or 42 percent of the travel market between this city pair. This makes bus travel the second most popular travel mode between New York and Buffalo, following behind air.

Exhibit B-37: Empire Corridor Bus Trips by Major Market Pairs							
Origin\ Destination	NYC	Albany	Utica	Syracuse	Rochester	Buffalo	Total
NYC		405,460	176,212	266,885	217,272	427,700	1,493,528
Albany	410,592		49,915	50,775	38,727	68,848	618,857
Utica	176,212	50,775		52,497	23,998	42,169	345,651
Syracuse	302,812	50,775	52,497		92,084	187,611	685,779
Rochester	236,090	51,636	24,097	104,133		159,211	575,167
Buffalo	422,568	63,684	36,145	183,209	166,956		872,562
Total	1,548,274	622,331	338,866	657,498	539,037	885,539	4,591,544
<i>Source: NYSDOT, Megabus, Greyhound, Adirondack Trailways</i>							

While New York-Albany captures just slightly less trips than the New York-Buffalo market with 405,460 trips, this is a small percentage of the total New York- Albany travel market, at approximately 14 percent.

This indicates that even if a transit mode cost is low, and has competitive time and frequencies, it will still have a difficult time competing with the convenience of the personal auto in this particular market. Over 20 percent of trips from Albany- Buffalo were made by bus or 68,848 out of a total 341,310 trips, making it the second most popular mode of travel between this city pair.

Bus Trips –Travel Mode Characteristics

Key characteristics that define the bus mode as modeled in the forecast include frequency of service, fare price, and travel time. Although on-time performance is a key additional characteristic of bus service, such data was impossible to access through the private carriers. Additional model input variables include trip purpose/travel time sensitivity, linking access and egress times, and congestion factors.

Bus Frequency

Frequency as a characteristic of transit service is a critical factor in making it a success against other transit modes and competing against car travel. Due to modest capital and operating cost in comparison to rail and air, bus frequency is considerably more robust than those transit modes. Nearly 600 bus trips connect the major markets on the corridor – providing better than hourly service to many of these markets.

Travelers departing from New York City have many options to take the bus to Albany and Buffalo, with a frequency of 41 a day. This convenient scheduling leads to a strong NYC-Buffalo bus travel market.

Exhibit B-38: 2009 Bus Frequency - Major Carriers ²⁴							
O Zone \ D Zone	NYC	Albany	Utica	Syracuse	Rochester	Buffalo	Total
NYC	0	41	19	33	27	41	161
Albany	41	0	9	11	12	10	83
Utica	19	9	0	12	6	8	54
Syracuse	33	11	12	0	23	24	103
Rochester	27	12	6	23	0	21	89
Buffalo	41	10	8	24	21	0	104
Total	161	83	54	103	89	104	594
Source: Megabus, Greyhound, Adirondack Trailways							

Bus Trip Time and Reliability

Bus trip time includes a number of considerations including access, wait, and travel time. In terms of travel characteristics, bus service is a blend of auto and rail travel, susceptible to the same driving

²⁴ Frequency identified via online schedules for major bus carriers serving the Empire Corridor

environment as auto and the same scheduling and competitive pricing scheme as rail. As noted above, the analysis for this report was unable to include an on-time performance standard for the many bus companies that operate in the region. Wait and access time were generated by the model based on headways between buses. For the purposes of simplification – an average was used to facilitate – for the reader, the identification of travel times for bus with associated city pairs. The Exhibit below includes a wait time of 10 minutes, 10 minutes, and 25 minutes of combined access and egress time added to the travel time.

Exhibit B-39: 2009 Bus Haul Times by Major Markets ²⁵

O Zone \ D Zone	NYC	Albany	Utica	Syracuse	Rochester	Buffalo
NYC	0	145	360	345	420	530
Albany	145	0	165	205	345	435
Utica	360	165	0	105	245	335
Syracuse	345	205	105	0	140	225
Rochester	420	345	245	140	0	135
Buffalo	530	435	335	225	135	0

Source: Megabus, Greyhound, Adirondack Trailways

Bus Cost Factors

The key to bus service is price. Historically, regional bus service has served economically disadvantaged populations – which provided valuable mobility to populations that could not afford air travel and to those that did not own an automobile. As Exhibit B-40 shows, the average fare structure of the major carriers serving the corridor meets the goal of providing low cost, regular service to the major markets considered in this study. Bus is more dominant than rail in terms of ridership due to the combination of slightly lower fares, better travel time and far more regular and reliable service. Enhanced service and speed along with a competitive price from rail would likely reduce the transit dominance of bus service on the Empire Corridor. In recent years, bus carriers such as Greyhound and Megabus have focused on providing improved service tailored to business and student markets – this focus by bus carriers will challenge the ability of rail to capture this important “choice rider” category – that seek not only value but quality as a substitute to automobile travel.

²⁵ Bus haul times identified by schedules provided by Trailways, Greyhound, and Megabus. Applied Access and wait times identified from professional resources and observation.

Exhibit B-40: Existing Bus Service – Major Carriers – Major Markets Fare Structure

O Zone \ D Zone	NYC	Albany	Utica	Syracuse	Rochester	Buffalo
NYC	\$0	\$30	\$62	\$40	\$55	\$60
Albany	\$45	\$0	\$28	\$45	\$57	\$73
Utica	\$62	\$28	\$0	\$19	\$40	\$0
Syracuse	\$38	\$45	\$19	\$0	\$52	\$36
Rochester	\$55	\$57	\$40	\$52	\$0	\$22
Buffalo	\$60	\$63	-	\$36	\$22	\$0

Source: NYSDOT, Megabus, Greyhound, Adirondack Trailways

Bus Trips Data Collection

The bus data was a combination of two data sources. Information regarding the bus service, frequency, schedule and travel time was gathered collecting data from each of the websites of the various commercial bus operators servicing the Empire Corridor, primarily Megabus, Greyhound and Adirondack Trailways, in addition to a few smaller operators.

Ridership numbers are not directly available from the commercial bus operators; therefore it was necessary to interpolate ridership numbers by using a loading factor. Different loading factors were obtained from sources at NYSDOT, and applied to buses, depending on whether the origin or the destination was NYC and whether the bus was leaving or reaching within the AM or the PM peak hours. It is perceived that the major driver of the rail market would be the six major metropolitan areas along the corridor, namely NYC, Albany, Utica, Syracuse, Rochester and Buffalo and hence the bus data was collected for intercity travel between the above mentioned cities. Bus service and ridership related data between the other intermediate cities located along the corridor was not readily and consistently available and the hence could not be incorporated into the model.

Bus Data Collection Limitations

Ridership numbers are not directly available from the commercial bus operators; therefore it was necessary to interpolate ridership numbers by using a loading factor. Different loading factors were obtained from sources at NYSDOT, and applied to buses, depending on whether the origin or the destination was NYC and whether the bus was leaving or reaching within the AM or the PM peak hours. On-time performance information was also not readily available from the bus operators.

4.5.2 Existing Conditions: Air

Air travel is the third most frequented travel mode along the corridor, carrying approximately 6 percent of all trips, as shown in Exhibit B-29. As shown in Exhibit B-41, in 2009 there were nearly 2.4 million air passenger trips on the Empire Corridor. There were 507,546 air trips made between New York City and Buffalo, or 44 percent of all travel for this market, making air travel the most popular mode of travel for this city pair. It is assumed that air passenger trips taken between the Empire Corridor city pairs include travelers from the Toronto, Connecticut and Northern New Jersey market. This is especially true of the Toronto market using the Buffalo to New York Air route. Air is also the most popular mode of travel between New York City and Rochester, with approximately 300,000 trips in 2009, or 52 percent of all travel for this city pair.

Exhibit B-41: Air Trips by Major Market Pairs

Origin/ Destination	NYC	Albany	Utica	Syracuse	Rochester	Buffalo	Total
NYC	0	99,443	0	262,706	298,825	507,489	1,168,463
Albany	98,006	0	0	0	0	0	98,006
Utica	0	0	0	0	0	0	0
Syracuse	266,899	0	0	0	0	0	266,899
Rochester	296,886	0	0	0	0	0	296,886
Buffalo	507,546	0	0	0	0	0	507,546
Total	1,169,338	99,443	0	262,706	298,825	507,489	2,337,801
<i>Source: Bureau of Travel Statistics</i>							

Air travel is not the favored mode from NYC- Albany, carrying only 3 percent of all trips in this market. This is due to the fact that air travel is inefficient at short distances. Travelers must access airports located outside the city core, and schedule time for security and check-in processes. These time barriers result in market advantages for an improved HSIPR service rail service within this market.

Air Trips - Travel Market Characteristics

Air travel is a complex travel mode for the user and in the complexity of the entire origin to destination line haul. For today's aviation user, delays, wait times, access and egress issues, and security checks, and baggage pick-up wait make it the most demanding and inconvenient of transit modes. For short regional in air travel trips such as those present on the Empire Corridor –between NYC and the Buffalo, Rochester, Syracuse, and Albany markets, air travel is incredibly inefficient – as wait and access times dwarf the in air travel time – and can often be the most frustrating of travel modes for users. Further, the cost of air travel is the highest of all travel modes and is subject various additional costs such as baggage, access, and parking costs. Given such characteristics, an improved high speed rail, with favorable fares and more competitive travel times should dominate between these two modes. As an example, Acela Express service from NYC to Washington D.C. has over a 50 percent market share between air and train travel and is one of only two Amtrak lines to turn a profit.²⁶ The related section 4.5.2.1a Frequency describes in more detail the travel time components and fare structures that define Empire Corridor air service.

Frequency

Frequency of air travel servicing the Empire Corridor is fairly robust and competes favorably with bus and rail – particularly on trips to cities on the western portion of the corridor with greater land travel time for bus and rail transit. As shown on Exhibit B-42 below, in 2009, there were 27 round trip flights per day from New York Metropolitan airports to Buffalo, and 8 between New York Metropolitan airports and Albany. In contrast, there is none between Albany and Buffalo.

Exhibit B-42: Frequency of Air Service on Empire Corridor ²⁷							
O Zone\ D Zone	NYC	Albany	Utica	Syracuse	Rochester	Buffalo	Total
NYC	0	8	0	18	19	26	71
Albany	8	0	0	0	0	0	8
Utica	0	0	0	0	0	0	0
Syracuse	17	0	0	0	0	0	17
Rochester	20	0	0	0	0	0	20
Buffalo	27	0	0	0	0	0	27
Total	72	8	0	18	19	26	149
<i>Source: Various commercial air carriers</i>							

²⁶ http://en.wikipedia.org/wiki/Acela_Express

²⁷ <http://www.orbitz.com/>

Travel Cost Factors

Air travel is by far the most expensive form of travel in the Corridor. Although airfare costs can vary greatly depending on time of purchase and seasonal variability as well as fluctuate regularly with changes in fuel price – this mode of travel always balances a comparatively high cost with comparatively fast travel times. Further, as noted above – the costs below are usually the bare minimum of total trip costs for air travelers, with baggage, airport access or parking costs adding considerable addition cost to the overall trip. Exhibit B-43 details the costs associated with air trips on the corridor.

Exhibit B-43: Average Air Travel Costs between Major Airports on the Empire Corridor ²⁸

O Zone \ D Zone	NYC	Albany	Utica	Syracuse	Rochester	Buffalo
NYC	\$0	\$145	\$0	\$101	\$102	\$103
Albany	\$145	\$0	\$0	\$0	\$0	\$0
Utica	\$0	\$0	\$0	\$0	\$0	\$0
Syracuse	\$101	\$0	\$0	\$0	\$0	\$0
Rochester	\$102	\$0	\$0	\$0	\$0	\$0
Buffalo	\$103	\$0	\$0	\$0	\$0	\$0

Source: Various commercial air carriers

Air Trips Data Collection

Air travel data has been obtained from the Bureau of Travel Statistics.²⁹ The website provides data for all flights flying to and from airports within the United States. The data obtained from this website was analyzed to get the air travel data by airport pairs for the selected airports within New York State and the Liberty International at Newark, NJ.

Air Trips Data Collection Limitations

There were no air data collection limitations.

4.5.3 Existing Conditions: Rail

There were approximately 932,801 Empire Corridor major market rail trips in 2009, capturing just fewer than 3 percent of the market, as shown in Exhibit B-44. The most frequented origin and destination was New York City, with approximately 423,000 trips. By far, the city pair most traveled to and from by rail is New York to Albany, with almost 320,000 trips. However, capturing only 11 percent of this market, rail is the third most popular mode of travel from New York to Albany, only beating air. Travel time and the cost do not make air travel competitive between New York and Albany. Travel time is discussed further in Section 4.5.4 Comparative Travel Characteristics: Travel Time and Cost. Similarly, rail is currently not competitive with Air from NY to Buffalo, capturing less than 1 percent of the market.

²⁸ <http://www.orbitz.com/>

²⁹ http://www.transtats.bts.gov/DL_SelectFields.asp?Table_ID=259&DB_Short_Name=Air

Frequency - Level of Service

Exhibit B-44: Rail Trips by Major Market Pairs							
Origin/ Destination	NYC	Albany	Utica	Syracuse	Rochester	Buffalo	Total
NYC	0	320,155	19,858	29,787	23,427	29,881	423,108
Albany	320,155	0	2,082	7,013	8,224	11,133	348,607
Utica	19,858	2,082	0	819	1,421	2,480	26,659
Syracuse	29,787	7,013	819	0	1,794	6,466	45,878
Rochester	23,427	8,224	1,421	1,794	0	1,862	36,728
Buffalo	29,881	11,133	2,480	6,466	1,862	0	51,821
Total	423,108	348,607	26,659	45,878	36,728	51,821	932,801
<i>Source: Amtrak</i>							

Empire Corridor Service between New York and Albany-Rensselaer consists of thirteen (13) daily roundtrips, while Albany-Rensselaer and Buffalo has a service frequency of just four (4) roundtrips per day. Overall the service is very modest – particularly for the East-West Corridor. The lack of service directly limits the market potential of rail against the other transit modes serving this corridor. Ultimately rail service from NYC to Buffalo and from cities along the East-West Corridor is limited to leisure travel exclusively or multi-day business trips.

Exhibit B-45: Rail Round-Trips Serving Empire Corridor Major Markets							
O Zone \ D Zone	NYC	Albany	Utica	Syracuse	Rochester	Buffalo	Total
NYC	0	12	4	4	4	4	28
Albany	12	0	4	4	4	4	28
Utica	4	4	0	4	4	4	20
Syracuse	4	4	4	0	4	4	20
Rochester	4	4	4	4	0	4	20
Buffalo	4	4	4	4	4	0	20
Total	28	28	20	20	20	20	136
<i>Source: Amtrak</i>							

Despite the competitive travel time from NYC to Albany, the first train daily train does not arrive in Albany until 9:45 am, slightly later than ideal for business travelers. A one way trip between Albany-

Exhibit B-46: Daily Train Schedule: Albany-Rensselaer to Buffalo Depew			
Service	Departure Albany-Rensselaer, NY	Arrival Buffalo-Depew, NY	Duration
63 Maple Leaf	10:03 am	3:10 pm	5 hours 7 minutes
281 Empire Service	12:30 pm	6:02 pm	5 hours 32 minutes
283 Empire Service	4:30 pm	9:57 pm	5 hours 27 minutes
49 Lake Shore Limited	7:05 pm	11:59 pm	4 hours 54 minutes
<i>Source: Amtrak Empire Service: New York, Niagara Falls, and Toronto NRPC Form W8 6/21/2010</i>			

Rensselaer and Buffalo has a greater than five (5) hour scheduled travel time. As shown in Exhibit B-46 and 4.19, it is not possible to travel by passenger rail from Albany-Rensselaer to Buffalo for a day trip. The earliest westbound train arriving in Buffalo from Albany-Rensselaer arrives at 3:10 PM while the latest eastbound train departing from Buffalo departs at 1:14 PM. The service also does not serve peak direction trips between cities as there are no scheduled eastbound trains between Buffalo and Albany-Rensselaer that arrive in the Albany-Rensselaer before 9 AM. The limited service between Albany-Rensselaer and Buffalo is insufficient to attract travelers who have other transportation options such as auto, bus or air that provide them with greater flexibility in scheduling their travel.

Exhibit B-47: Daily Train Schedule: Buffalo to Albany-Rensselaer			
Service	Departure Buffalo-Depew, NY	Arrival Albany-Rensselaer, NY	Duration
280 Empire Service	4:29 am	9:45 am	5 hours 16 minutes
284 Empire Service	7:59 am	1:45 pm	5 hours 46 minutes
48 Lake Shore Limited	9:08 am	2:50 pm	5 hours 42 minutes
64 Maple Leaf	1:14 pm	6:50 pm	5 hours 36 minutes
<i>Notes: Train 280 does not operate on Sunday</i>			
<i>Source: Amtrak Empire Service: New York, Niagara Falls, and Toronto NRPC Form W8 6/21/2010</i>			

Trip Time and Reliability

With a scheduled run time of 150 minutes and a total trip time of 190 minutes including access and egress times and 1 standard deviation of average delay with an average cost of \$38, rail travel from NYC - Albany, is competitive with all other modes (see Section 4.5.4 Comparative Travel Characteristics: Travel Time and Cost).

Exhibit B-48: Scheduled Travel Times for Major Market Pairs

Origin/ Destination	New York	Albany	Schenectady	Utica	Syracuse	Rochester	Buffalo	Niagara Falls
New York		2:30	3:20	4:40	5:45	7:06	8:12	9:34
Albany	2:30		0:24	1:42	2:48	4:08	5:15	6:45
Schenectady	3:40	0:41		1:18	2:24	3:44	4:51	6:21
Utica	5:06	2:01	1:21		1:05	2:26	3:32	5:01
Syracuse	6:10	3:05	2:25	1:04		1:20	2:27	3:53
Rochester	7:41	4:36	3:55	2:34	1:30		1:06	2:31
Buffalo Ex St.	8:12	5:35	4:54	3:33	2:29	0:59		1:23
Niagara Falls	9:16	6:25	5:48	4:25	3:21	1:51	0:52	

Notes: Average of scheduled travel times of trains operating Monday through Friday.

Source: Amtrak Empire Service: New York, Niagara Falls, and Toronto NRPC Form W8 6/21/2010

In contrast, at 8:12 min rail haul time between NYC and Buffalo Exchange Street at an average cost of \$58 is not competitive with the other modes, see Exhibit B-49. The long trip-time for a transit mode is a contributing factor in discouraging the use of the rail corridor to travel between key cities like Buffalo-New York City by discretionary (i.e., choice) passengers. Furthermore, poor reliability further hinders discretionary choice passengers. (See Section 4.4.5 Comparative Travel Characteristics a complete comparison of trip time between modes.)

Exhibit B-49: Total Haul Times for Major Market Pairs						
Origin / Destination	NYC	Albany	Utica	Syracuse	Rochester	Buffalo (ExS)
NYC	0	226	355	429	509	601
Albany	217	0	169	243	323	415
Utica	335	158	0	114	194	286
Syracuse	401	224	106	0	120	212
Rochester	489	312	194	128	0	132
Buffalo Ex St.	568	391	273	207	119	0
<i>Source: Amtrak Empire Service: New York, Niagara Falls, and Toronto NRPC Form W8 6/21/2010</i>						

A statistical analysis of May 2008 Empire Corridor west of Albany-Rensselaer operations reveals that the average actual running time was 58 minutes longer than the scheduled running time, with some trains requiring two hours more than the scheduled running time. Moreover, it should be noted that the present scheduled times between Albany-Rensselaer³⁰ that include scheduled times ranging from 6:10 to 6:55 reflect non-competitive average speeds (52 to 46 MPH) and already reflect significant additional scheduled time to account for rail congestion on the Corridor. For example, standard rail industry practice on primarily double track mainlines call for a 6 percent schedule margin to provide for reliable service, whereas the trains on the Empire Corridor have excessive scheduled margins ranging from 14 percent to 24 percent.

On-time performance records indicate that these scheduled travel times were only met 80.1 percent of the time between Penn Station and Albany-Rensselaer and 44.2 percent of the time between Albany-Rensselaer and Niagara Falls in 2008.³¹

Amtrak routinely collects information on the causes of train delays, which are frequently due to host/owner railroad issues. Exhibit B-50 summarizes the extent of the delays by the responsible entity and the major problems on each corridor. Overall, these problems in the Empire Corridor resulted in over 161,000 minutes of annual delay, according to analysis of Amtrak data provided to NYSDOT.

Of the 6805 Empire Corridor trains operating between July 1, 2009 and June 30, 2010, more than 10 percent were over 30 minute late. More than 4 percent were more than an hour late and more than 1 percent was more than two hours late. The average train trip on the Empire Corridor experienced 35 minutes of delay en route. While some trips can recover some of the delay en route, the vast majority do not, leading to the poor OTP results described above.

³⁰ June 21, 2010 Amtrak public timetable

³¹ Amtrak Conductor Delay Reports, July 1, 2009 to June 30, 2010

Exhibit B-50: 2009-2010 Empire Corridor Delays			
Corridor Segment	Entity	% of Delay Cause	Common Causes
New York City - Poughkeepsie	Metro-North	75	Commuter train interference
	Amtrak	23	Passenger train interference (New York Penn Station), passenger loading issues
	Other	2	Waiting for scheduled departure time, weather
Poughkeepsie-Albany-Rensselaer	CSX	61	Slow orders, communications and signals issues, freight train interference
	Metro-North	11	Poughkeepsie congestion
	Other	2	Weather
Albany-Rensselaer – Niagara Falls	CSX	73	Freight train interference, slow orders, work zones
	Amtrak	25	Passenger loading issues, crew related delays
	Other	2	Weather, Customs and Immigration
Source: Amtrak Conductor Delay Reports, July 1, 2009 to June 30, 2010			

The cost of rail for travel on the Empire Corridor is very competitive with other forms of travel serving the corridor. Compared with similar distances served by Amtrak – the current fare structures appear subsidized to induce travelers. Exhibit B-50 identifies the fares associated with rail service for the major markets on the Empire Corridor.

Exhibit B-51: Rail Service to Major Markets - Travel Cost						
Origin/Destination	NYC	Albany	Utica	Syracuse	Rochester	Buffalo
NYC	\$0	\$38	\$57	\$57	\$57	\$58
Albany	\$38	\$0	\$23	\$27	\$41	\$46
Utica	\$57	\$23	\$0	\$18	\$27	\$36
Syracuse	\$57	\$27	\$18	\$0	\$21	\$26
Rochester	\$57	\$41	\$27	\$21	\$0	\$19
Buffalo	\$58	\$46	\$36	\$26	\$19	\$0
Source: http://www.amtrak.com/servlet/ContentServer?pagename=Amtrak/HomePage						

Rail Trips Data Collection

The rail ridership data was obtained by analyzing the origin-destination data (for year 2009) obtained from Amtrak. The data was sorted out by station pairs which provided the ridership between the discreet station pairs and also the total boardings at each of the stations.

Rail Trips Data Collection Limitations

There were no rail data collection limitations.

4.5.4 Comparative Travel Characteristics: Travel Time and Cost

The following section comparatively addresses the competitiveness of the various modes studied for each of the major markets. Based on distance and existing service characteristics, different modes have competitive strengths over others. This section will discuss where current rail service falls in relation to other modes in its ability to compete and attract riders between the various markets and market pairs. To establish the comparative competitive context, the narrative below will focus on the relationship of travel time and cost for some of the major market pairs and will discuss reliability and level of service between these markets.

Identification of Generalized Cost

Prior to discussing the comparative competitive strengths and weaknesses of each travel mode, this section describes the generalized cost approach used to take into account the differential value of time in terms of monetary cost for different users – i.e. business and non-business user groups.

The application of discrete choice modeling works on the basis of random utility theory wherein the logit models are used to develop utility equations or the total disutility of a travel is estimated in the form of generalized cost. This generalized cost is basically a linear combination of the monetary cost i.e., fare, fuel cost, toll etc. and the non-monetary cost i.e., travel time (walk, wait, in-vehicle time etc.). The monetary cost i.e., currency is converted to time using the value of time figure which again varies according to the traveler's purpose of trip and/or income.

The examples below identify two types of trips present on the Empire Corridor, a relatively short trip defined by NYC-ALB in Exhibit B-53 trip and long trips as defined by NYC-BUF in Exhibit B-54. Generalized cost is calculated and plotted on the base year rail ridership bar chart to eventually analyze the mode shift dynamics between car, air, rail and bus for business and non-business trip. The parameters and criteria defining the generalized cost characteristics associated with trips on the Empire Corridor are defined in Exhibit B-52 directly below and explained by the following defined acronyms.

Exhibit B-52: Generalized Cost Input Parameters

Parameters	Car	Air	Rail	Bus
Fare for PT (\$)		138	38	22
Travel Time (mins)	167			
Congested TT (mins)	199.4387			
Distance (miles)	150			
IVTT (mins)		76	186	150
OVTT (mins)		50	15	20
Gcost (mins) Business	231.50	322.96	256.47	213.43
Gcost (mins) Non-Business	168.38	695.93	527.94	446.86
Modeled Ridership	3530404	98006	320155	392362

where,

Gcost= generalized cost in minutes

Gcost (car) = travel time (congested) + distance*(VOC/VOT) + toll/VOT

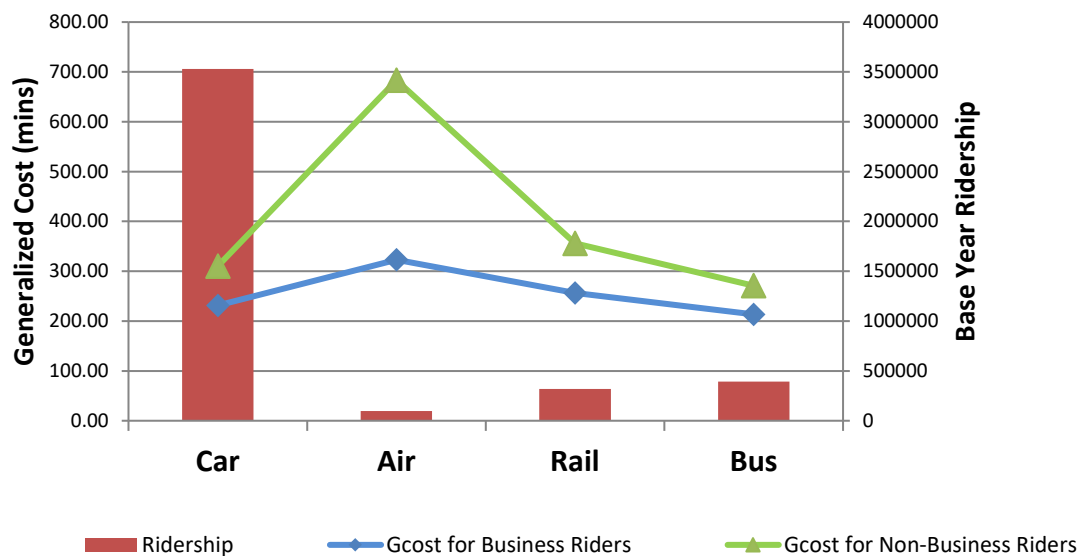
Gcost (PT) = IVTT + 2*OVTT + fare/VOT

VOC= vehicle operating cost (around 0.1674 \$/miles)

VOT = value of time for a business trip (0.939 \$/min) and for a non-business trip (0.272 \$/min)

IVTT= in-vehicle travel time in minutes³²

OVTT= out of the vehicle travel time in minutes

Exhibit B-53: New York City to Albany Market Generalized Cost³³

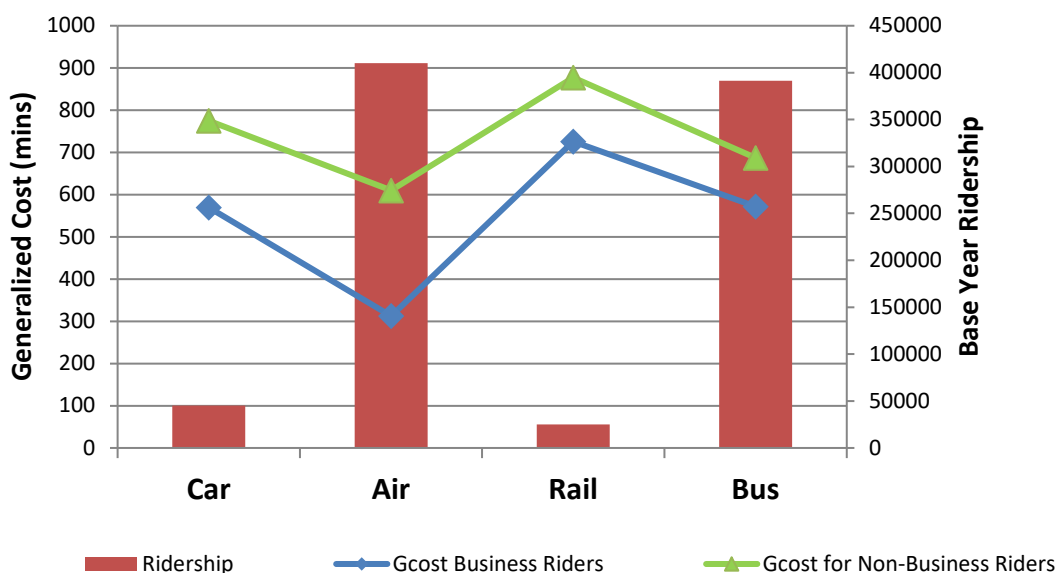
³² Value of time for business/other purpose trips: adjusted based upon average income from California HSR model report (Outwater et. al., "California Statewide Model for High-Speed Rail", Journal of choice Modeling, 3(1) 2009, p.75)

³³ Ibid, 31

It can be concluded from the charts that the disutility or the generalized cost between NYC-ALB, irrespective of the trip purpose, is highest for the air mode, and then rail, car and bus in progressive order. This also suggest that the bus is highly competitive mode for a trip between New York City to Albany, but car leads in terms of the ridership because of its own advantages to directly reach to the final destination.

The ratio of the generalized cost between the non-business and business trip between NYMTC to ALB for a) car is 1.34 b) air is 2.12 c) rail is 1.39 and d) bus is 1.27. This can be interpreted as the propensity for the air mode to be preferred for a non-business trip is more than twice for a business trip while for all other modes the propensity lies between 1.27 to 1.39, suggesting not a very significant difference between a business and a non-business traveler's mode choice preference for rail, bus and car in terms of parameters weighed in the generalized cost equation.

Exhibit B-54: New York City to Buffalo Market Generalized Cost³⁴



When compared to a trip between NYMTC to BUF i.e., a longer trip compared to a shorter trip: NYC-ALB, air mode has the least generalized cost or the disutility and hence highly competitive and preferred mode for both business and non-business trip. The least disutility or the generalized cost after air a) for a business traveler is followed by car, bus and rail, and b) for a non-business traveler is followed by bus, car and rail, in progressive order for both travelers. This suggest that after air, car and bus are the second most competitive mode when analyzed using generalized cost; but the disutility of driving a car for a

³⁴ Source: Value of time for business/other purpose trips: adjusted based upon average income from California HSR model report (Outwater et. al., "California Statewide Model for High-Speed Rail", Journal of choice Modeling, 3(1) 2009, p.75)

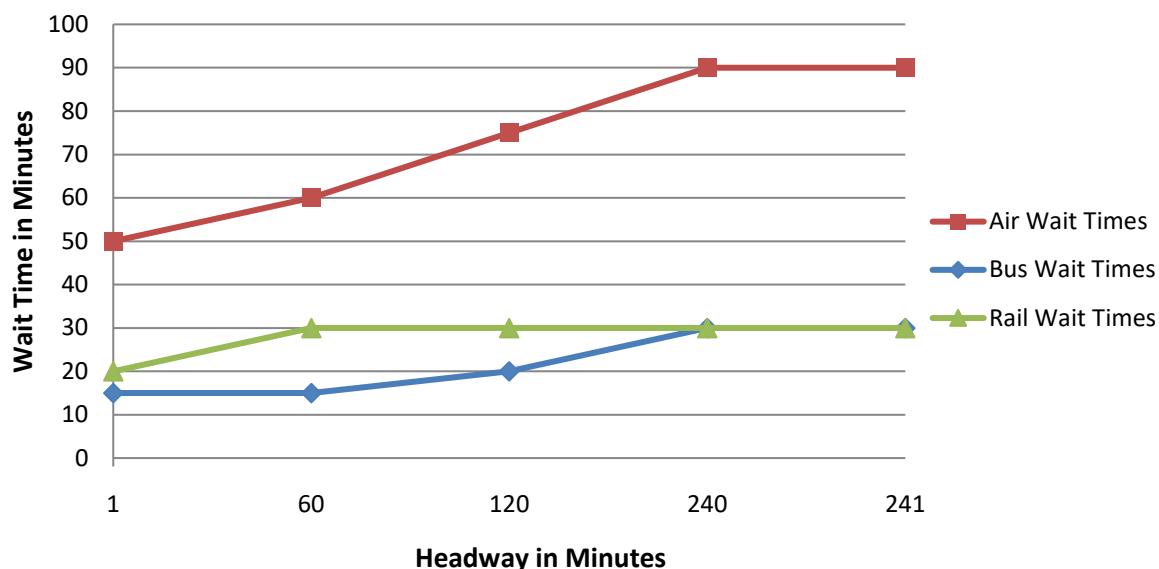
longer time almost eight hours (not accounted in the generalized cost equation) compared to a sit and travel in a bus illustrates the higher bus ridership compared to car.

The ratio of the generalized cost between the non-business and business trip between NYMTC to BUF for a) car is 1.36 b) air is 1.95 c) rail is 1.21 and d) bus is 1.2. Similar interpretation, as NYMTC to ALB, can be carried out i.e., the propensity for the air mode to be preferred for the non-business trip purpose is almost twice for the business trip purpose while for all other modes, the propensity lies between 1.2 to 1.39, suggesting not a very significant difference between a business and a non-business traveler's mode choice preference for rail, bus and car.

Calculation Wait Times by Transit Mode

One of the key calculations inputted into travel time is an average wait time. Wait time, as shown in Exhibit B-55, for transit mode can considerably increase travel time along with OTP and average delay magnitude as well as access and egress. All of these additional times add to the time disadvantage to slower speed transit compared to car. As a part of the total trip time calculations – wait time is factored by transit modes – as each mode has different average wait time characteristics based on number of headways between departures as well as variable characteristics between mode – such as the heightened level of security for air travel.

Exhibit B-55: Comparative Wait Times for Transit Modes³⁵



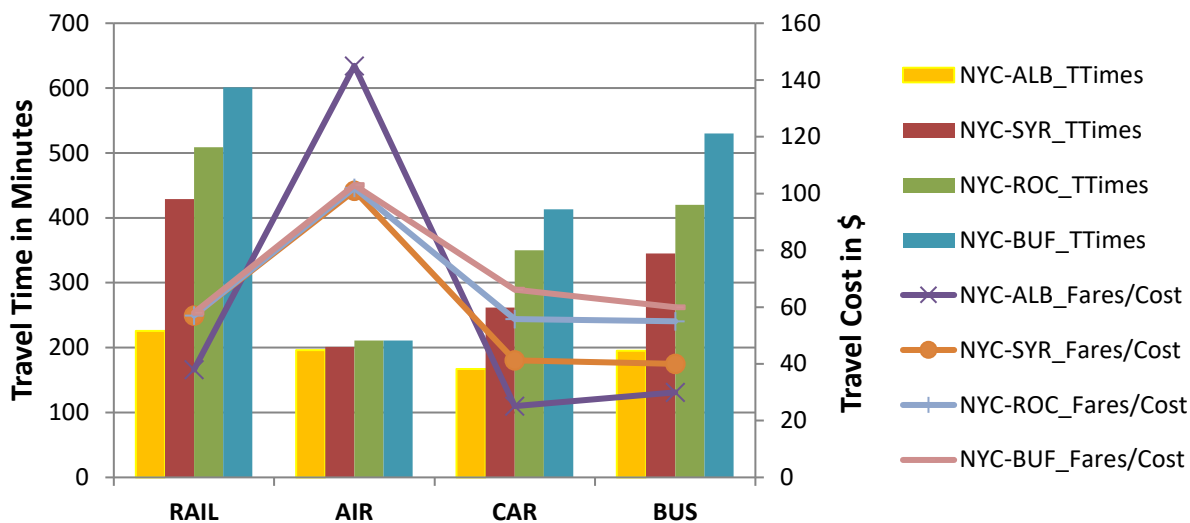
³⁵ Source: Amtrak, Google, Orbitz, Expedia, Megabus, Greyhound, Adirondack Trailways, Transportation Planning Handbook ITE, 3rd Edition 2009

Comparative Evaluation of Travel Time and Cost – NYC to Major Market Examples

This section describes the interplay between cost and travel time and the relationship to distance between origin and destination in terms of determining ridership. These existing characteristics are important factors to consider when evaluating future forecasts and alternatives to be considered. While some modes of travel are much faster, their cost may be much greater. These are two factors that affect travel behavior and which are applied into the demand management model. The following section evaluates two types of trips to show the relationship between cost and time and trip distance – a range of longer trips as shown by the NYC Market to other Major Markets and a short trip between Syracuse and Rochester to show the sensitivity between Rochester and Syracuse and to show the relationship between three similar cost travel modes, rail, bus and car.

As shown in Exhibit B-54, when considering total travel times³⁶ alone, all modes are competitive from NYC to Albany. As a result, air becomes much less competitive from NYC to Albany when cost is considered, capturing only 3 percent of this market, as indicated by analysis of the various modes in Section 4.2. Traveling by vehicle from New York to Albany has the lowest overall cost, estimated as 25 dollars³⁷. This is slightly lower than the \$35 and \$38 average costs of bus and rail, respectively, and more than five times lower than the average air travel cost of \$134. Given the moderate distance of approximately 147 miles between the two cities, every transit mode is at a disadvantage to the car due to transit linkages, wait time factors, and the need to follow a predetermined schedule. However, if schedules are convenient and service is reliable, rail can be seen as a competitive travel mode from NYC to Albany from a cost and convenience standpoint.

Exhibit B-56: Travel Time and Cost for One-Way Trips from NYC



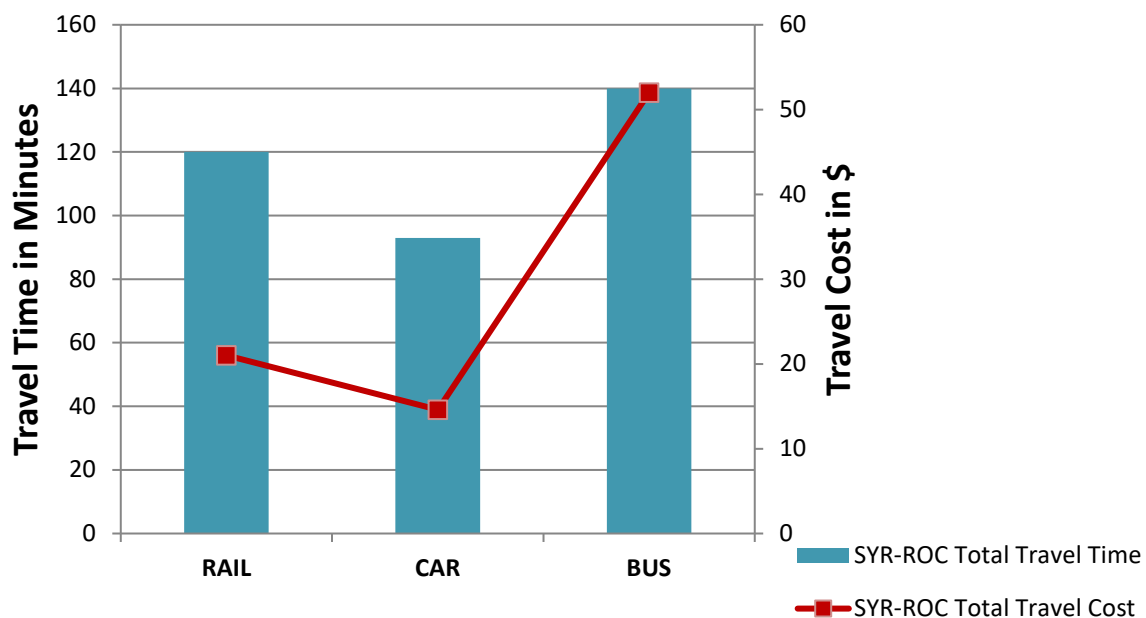
³⁶ Total travel time includes average delays, dwell times, security clearance.

³⁷ Car travel cost is determined by a rate of .1674 per mile – which is the perceived rather than actual cost as identified by [Transportation Planning Handbook](#), ITE 2009

Source: Amtrak, Google, Orbitz, Expedia, Megabus, Greyhound, Adirondack Trailways

While trip cost is still the most expensive when traveling from NYC to Buffalo by air, the margin is greatly decreased to about 2 – 3 times the cost of the other modes. However, travel time is 2.5 – 3.5 times less by air. Given the great distance between NYC and Buffalo, traveling by air is a highly competitive mode considering travel time and cost. As a result 51 percent of all trips between New York City and Buffalo are made by air, as discussed in Section 3.4.1 Air Trips. In contrast, rail has the greatest travel time, more than 3.5 times longer than traveling by air, but only half the cost, as shown in Exhibit B-54. Combined with the poor on-time performance and uncompetitive schedules discussed in Section 3.5 Existing Rail, rail is the least competitive mode between New York and Buffalo, capturing only 2 percent of all trips. While no mode comes close to being as fast as air in this market, some travelers do need a cheaper alternative. With 41 percent of this market, bus clearly detracts from rail, when cost, in addition to frequency and reliability, not time, is the priority. Bus travel has a slightly shorter overall travel time as compared to rail, and is less expensive, at \$44 compared to \$58.

Exhibit B-57: Travel Time and Cost for One-Way Trip from Syracuse to Rochester



Source: Amtrak, Google, Orbitz, Expedia, Megabus, Greyhound, Adirondack Trailways

Exhibit B-57 above identifies a shorter trip between Syracuse and Rochester where air travel is not available and dynamics between modes are similar in terms of cost. Car has the best price and travel time when comparing the modes – and as Exhibit B-58 shows, Car dominates travel between this pair. Interestingly though, rail has superior travel time and cost but is a small fraction of travel between these markets compared to bus. The major characteristics for this city pair – explaining this ridership difference is the level of service and on time performance – with four round trips total for rail and 24 for bus and rail On Time Performance (OTP) of less than 60 percent - while bus OTP is likely higher than 85 percent given the number of trips between cities.

Exhibit B-58: Comparative Travel Market : NYMC to Major Markets							
NYMTC	NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
Air	0	99,443	0	262,706	298,825	507,489	1,168,463
Bus	0	405,460	176,212	266,885	217,272	427,700	1,493,528
Car	0	320,155	19,858	29,787	23,427	29,881	423,108
Rail	0	320,155	19,858	29,787	23,427	29,881	423,108
Total	0	1,145,213	215,929	589,165	562,950	994,951	3,508,207
<i>Source: Amtrak, Google, Orbitz, Expedia, Megabus, Greyhound, Adirondack Trailways</i>							

Frequency of Service and Competitiveness between Transit Modes

Although trip time and cost are perhaps the most important characteristics when evaluating the competitiveness between modes – frequency of service is a critical determinant of mode utilization – particularly when the frequency of service is so low that it eliminates potential markets that other modes successfully serve due to their respective service levels. A clear example of this dynamic is shown in existing Amtrak service between NYC and Albany which has competitive trip time and cost compared to all other modes and competitive level of service – 12 round trips between this particular city pair, by comparison, service between city pairs between Albany and Buffalo which have similar distances and travel times between rail, bus and car as well as competitive fares between all three modes – however rail fails to capture a significant share of any pair market. The only explanation for this phenomenon is that rail has significantly less service – only four round trips between the pairs on the East-West Corridor that it does not serve the market need to the degree that other modes do. Further, poor on-time performance adds to the diminished capacity of rail to serve the travel market present.

On Time Performance and Competitiveness between Transit Modes

Similar to Frequency of Service, On-Time Performance (OTP) – is a factor that can diminish the impact of competitive travel time and fare on selection of mode of travel. Poor OTP effectively adds to travel time – particularly when service is infrequent – causing commuter to have little idea of when they should arrive. Further, poor OTP effectively eliminates business travel – as travelers cannot take chance on the mode of travel not getting them to their destination around their scheduled time. The East-West Empire Corridor has historically low OTP and very extended average delay times – which render the competitively priced service ineffective in terms of serving market needs – that bus is better equipped to serve.

5.0 Operating Plan Alternatives Studied

This section describes the alternatives that were evaluated and forecasted. The alternatives considered are by no means the only potential scenarios available – but an initial test of travel time and schedule variables that allow for an understanding of market dynamics to be developed. In order to not only evaluate the existing transportation market and establish a no-build baseline context for the Empire Corridor, but provide an assessment of a forecasted market under a set of controlled scenarios susceptible of modern transportation demand modeling techniques, a set of alternatives was established based on previous work from the New York State High Speed Rail 2018 & 2030 Vision.³⁸ This plan was updated to include assumptions for a mostly dedicated third track with alternative maximum speeds of 79, 90, and 110 mph and to extend 2030 to the 2035 forecast year. The proposed 2035 Operating Plan and schedule dramatically increase service on the east-west portion of the Empire Corridor between Albany and Niagara Falls from four to 13 round trips as well as increased speed and reliability. The Vision was based on a certain set of assumptions relating to improvements on the Metro-North Railroad Hudson Line as well as identification of improvements on the East- West portion of the Empire Corridor.

Stated directly, this market study evaluates the comparative competitiveness of an updated set of Empire Corridor Rail Service Operating Plans versus other competing modes and provides existing and projected ridership statistics for the following conditions:

- 2009 - Existing Conditions
- 2012 - EIS Base Year
- 2018 - 79, 90, and 110 MPH (Maximum Speed, Mostly Dedicated Third Track) (Phase I of Rail Service Improvements Completed)
- 2035 - 79, 90, and 110 (All Rail Service Improvements Completed)
- 2018/2035 - No Build Scenarios

The forecast development process required that 2009 conditions be forecasted to 2012 to match the assumed filing of an EIS from which build and no-build scenarios would be forecast and evaluated. 2012 data was then forecast to 2018 to create a no-build scenario (this scenario would maintain the existing service, speed and assumptions as if rail service had not changed since 2012) as well as maximum speeds of 79, 90, and 110 mph. Finally 2012 data was forecast to 2035 for the no-build scenario and maximum speed alternatives of 79, 90, and 110.

³⁸ September 17, 2009 LTK

5.1 Alternatives Set-up and Assumptions

Schedules provided for 79, 90, and 110 mph Maximum Speed Mostly Dedicated Third Track– for 2018 and 2035;

- are all associated with dedicated third track alternatives along most (but not all) of the Corridor between Hoffmans and Buffalo.
- reflect maximum speeds for segments not constrained by curves.
- are not average speeds but max allowable speeds. The schedule provided determined the average speed and time.
-

The differences between 2018 and 2035 operating plan and model inputs include:

- Scheduling Changes
 - Frequency of services – number of trains
 - Changes in intermediate destinations
- Change in the socio-economic attributes (population, household, employment)

5.1.1 Study Years

For the purpose of the study three bench mark years were taken into consideration, 2012, 2018 and 2035. Whereas 2012 is considered the base year of the study, 2018 is considered the beginning of the service improvement and 2035 the end of the service improvement. Under both 2018 and 2035 three maximum operating speeds, 79 mph, 90 mph and 110 mph have been considered along with a no-build option.

The base year for the study is 2012, a projection of 2009 into the future. There is no change in the rail operations during this period in terms of speed, schedule and or frequency. The only change factored in the 2012 scenario is the projected change in the socio-economic conditions which have been discussed in Section 2. Along with the change in the socio-economic conditions the model factors in the associated ambient growth in various modes of transportation.

The 2018 no-build operating plan is again based only on the changes of the socio-economic conditions and the ambient growth of in the various modes of transportation.

The 2018 no-build rail service is calculated with the actual run times plus a built in delay equivalent to one standard deviation of the 2009 year delay (based on information obtained from rail operators).

2018 marks the beginning of an improved service plan based on a dedicated third track which would allow for unopposed rail service along this corridor. The schedule developed was based on simulation that assumed a perfect run – or a “Golden Run” of one train set.

The 2018 operating plan incorporates changes in the schedule through the entire corridor (as detailed in Appendix 2) and built-in delay is reduced to 20 percent of the first standard deviation of 2009 year delay to reflect the improved on time performance that is being predicted due to the dedicated third track. The model runs to calculate the ridership is based on three scenarios of maximum speed of rail operations for 2018; 79 mph, 90 mph, 110 mph.

The 2035 no-build rail service is calculated with the actual run times plus a built in delay equivalent to one standard deviation of the 2009 year delay (based on information obtained from rail operators)

The 2035 operating plan incorporates changes in the schedule and adds frequency (as detailed in Appendix 2) and the built in delay is reduced to 20 percent of the first standard deviation of 2009 year delay to reflect the improved on time performance that is being predicted due to the dedicated third track. The model forecasting here is also based on three scenarios of maximum speed of rail operations for 2018; 79 mph, 90 mph, and 110 mph. The 2035, 110 mph operating plan is considered to be the peak alternative considered – with the highest average speed and maximum schedule (all 2035 round trips are the same).

Differences between Speeds

One of the obvious defining features of the speed labeled alternatives is speed. Each one of the maximum speed alternatives 79 mph, 90 mph and 110 mph has a corresponding average speed based on the schedule provided – where the scheduled travel time was divided by distance of trip. Exhibit B-59 shows an example of the impact of the max speed alternative schedules on actual average speeds between NYC and Major Markets on the Corridor. As the exhibit shows – there is not a major difference in actual average travel times in any of the alternatives.

Exhibit B-59: Average Speeds by Alternative - NYC to Major Markets				
From New York to	Actual Average Speed Achieved			
	Base	79mph	90mph	110mph
Albany	48.39	63.83	63.83	63.83
Utica	45.71	61.54	63.16	64.29
Syracuse	45.19	60.21	62.34	63.47
Rochester	48.61	62.64	65.33	67.06
Buffalo-Ex	48.56	62.05	64.86	66.93

Exhibit B-60: Travel Time By Alternative - Albany to Other Markets				
Westbound from Albany to:	Amtrak Train 281 Fall 2009	79 mph max	90 mph max	110 mph max
Amsterdam	0:39	0:35	0:34	0:33
Utica	1:38	1:27	1:21	1:17
Rome	1:53	1:43	1:37	1:32
Syracuse	2:43	2:24	2:14	2:08
Geneva (Branch)		3:25	3:14	3:05
Rochester	3:57	3:35	3:20	3:10
Buffalo Depew	4:57	4:32	4:13	3:59
Buffalo Exchange St	5:11	4:48	4:29	4:15
Niagara Falls	6:20	5:28	5:05	4:51

These average speeds along with the number of stops along the corridor lead to the following trip times between city pairs as shown in Exhibits B-60 and B-61. The maximum speed travel times are compared

against the 2009 existing condition. The Exhibit shows considerable time savings when considered on the whole between existing service and 110 mph alternative – such as Albany to Buffalo Exchange – where nearly an hour is saved or 20 percent of travel time. The 125 mph alternative performs better still.

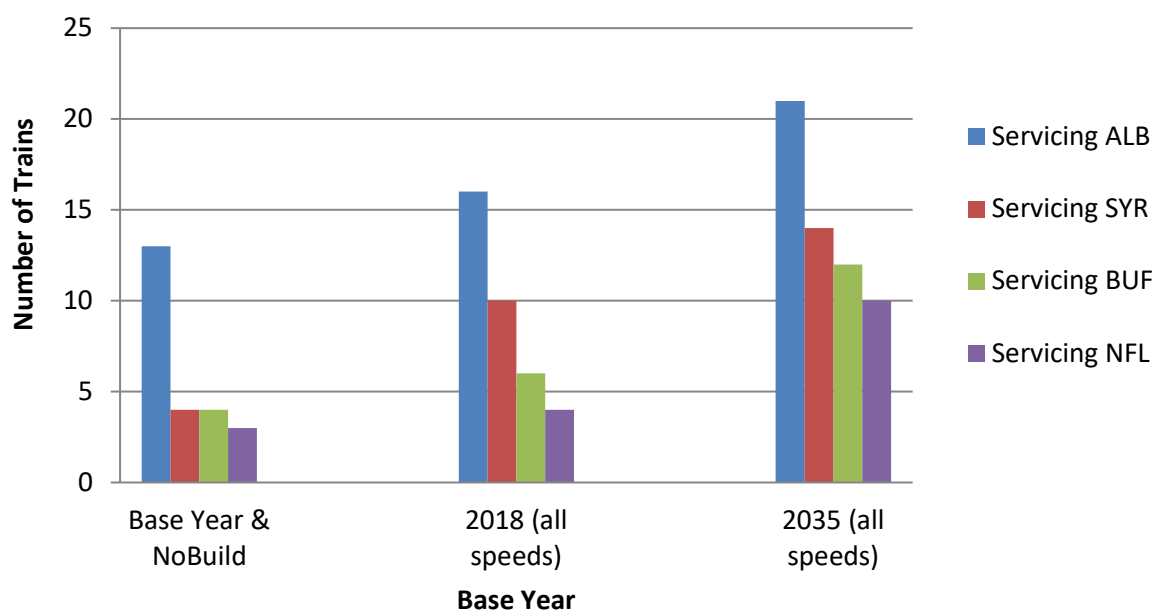
On the longer trips from NYC to East-West Corridor markets – travel time savings are significant – offering real competitive advances versus other travel modes serving the corridor. As Exhibit B-61 shows – travel from NYC to Buffalo is over an hour and 5 minutes less under the 110 mph maximum versus the existing Amtrak 2009 schedule.

Exhibit B-61: Travel Time By Alternative – New York to Western Corridor Markets				
From New York to:	Amtrak Train 281 Fall 2009	79 mph max	90 mph max	110 mph max
Amsterdam	3:19	3:05	3:04	3:03
Utica	4:18	3:57	3:51	3:47
Rome	4:33	4:13	4:07	4:02
Syracuse	5:23	4:54	4:44	4:38
Geneva (Branch)		5:55	5:44	5:35
Rochester	6:37	6:05	5:50	5:40
Buffalo Depew	7:37	7:02	6:43	6:29
Buffalo Exchange St	7:51	7:18	6:59	6:45

5.1.2 Differences between train schedules from 2012 to 2018 and 2035

The other key difference that was input into the model for purposes of forecasting was the difference between the number of trains servicing stations in forecast years 2018 and 2035. Exhibit B-62 below shows the difference between the forecast years and the baseline.

Exhibit B-62: Trains Servicing Selected Stations in Forecast years 2012, 2018 and 2035³⁹



³⁹ This information was derived from alternative and existing schedules contained in Appendix B.

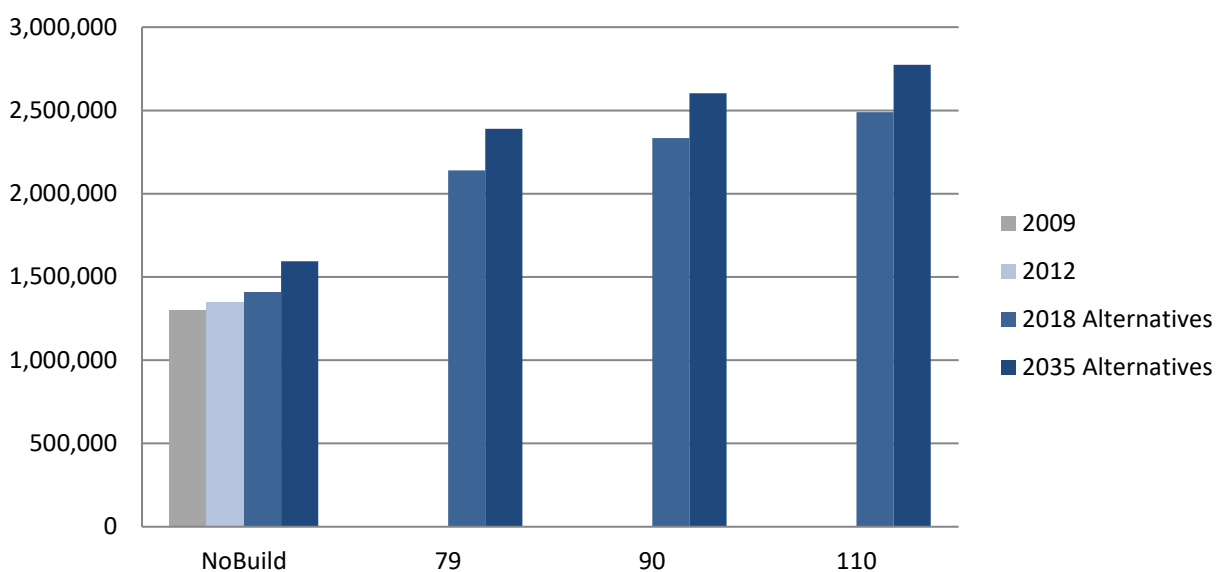
6.0 Forecast Results

6.1 Corridor-wide Ridership

This section discusses ridership projections for 2012, 2018 and 2035 no-build and build alternatives along the entire corridor. Between 2009, this study's existing conditions year, and 2012, the program based year, rail ridership is expected to increase 4 percent, to 1.3 million riders, as shown in Exhibit B-63 Existing and Projected Ridership. The greatest projected ridership occurs under the 110 mph alternatives. With the anticipated population increases and further enhancements in level of service on the corridor, the 2035 110 mph scenario projects the greatest ridership gains, with over 2.7 million trips as shown in Exhibits B-63 and B-64. This represents a 74 percent increase over the no-build scenario for 2035, or a difference of almost 1.2 million trips, as shown in Exhibit B-65. Similarly, the 2018 110 mph scenario forecasts 1.08 million riders over the 2018 no-build scenario. Overall, every build alternative scenario forecasts large ridership gains versus their corresponding no-build scenarios, ranging from 52-74 percent, shown in Exhibit B-65.

Exhibit B-63 and Exhibit B-64: Existing and Projected Ridership

Year\Alternatives	Base & No-Build	79	90	110	125
2009	1,298,707	NA	NA	NA	
2012	1,346,445	NA	NA	NA	
2018	1,409,899	2,138,961	2,334,490	2,489,350	
2035	1,594,824	2,390,352	2,603,173	2,774,500	4,300,000



6.2 Major Market Boardings

This section describes boardings at the six major market stations for 2012, 2018 and 2035 no-build and build alternatives. As shown in Exhibits B-65 through B-69 each major station experiences the greatest boarding under the 110 mph scenarios; however it varies as to which year, 2018 or 2035, the greatest boardings occur. For all major market stations except Albany, the boardings increase from 2018 and 2035. In contrast, boardings are greater in Albany in 2018 than in 2035 in all alternative scenarios. This decline in ridership could be due to a variety of factors, including an anticipated decrease in the core population of Albany County as well as employment profiles. This projected decline could be reversed if evidence of changes in population projections comes to light or if region specific alternative growth scenarios are considered. Despite this decline, Albany remains the second most frequent station for boardings in both 2018 and 2035, and the 2018 and 2035 figures indicate a 38 percent and 36 percent increase over 2009 existing conditions figures, as shown in Exhibit B-68.

As shown in Exhibits B-66 through B-69 collectively, the western corridor stations of Syracuse, Rochester and Buffalo, are projected to experience a far greater change in boardings than New York City, Albany and Utica, in both 2018 and 2035, ranging from a 124263 percent increase over the same year no-build scenarios. This large percentage increase is to be expected, as currently these cities have low boardings due to limited frequency, slow travel time and poor reliability. The schedule enhancements are anticipated to increase ridership from these western corridor cities, as reflected by strong ridership forecast numbers.

As can be expected, the greatest increase in the number of boardings in all scenarios occurs in NYC, with over 1 million anticipated riders for the 2035 110 mph scenario. This reflects a 148 percent and 177 percent change over 2009 figures shown in Exhibit B-44. In both 2018 and 2035, the greatest percent increase in ridership occurs between the 79 and 90 mph scenarios, increasing 8 percent and 7 percent respectively. Between the 90 mph and 110 mph scenarios, ridership increases 5 percent both years.

Exhibit B-65: Percent Change in Ridership			
Year\Alternatives	79 & No-Build	90 & No-Build	110 & No-Build
2018	52%	66%	77%
2035	50%	63%	74%

Exhibit B-66 and Exhibit B-67: 2018 Boardings

Total Boardings	NYP	ALB	UCA	SYR	ROC	BUF
2018- NO BUILD	615,630	319,356	24,553	50,211	53,556	72,495
2018- 79 MPH	837,956	391,576	41,061	135,312	125,744	178,578
2018- 90 MPH	885,913	408,319	44,840	152,951	144,575	225,887
2018- 110MPH	918,272	422,071	48,572	167,689	160,565	263,478

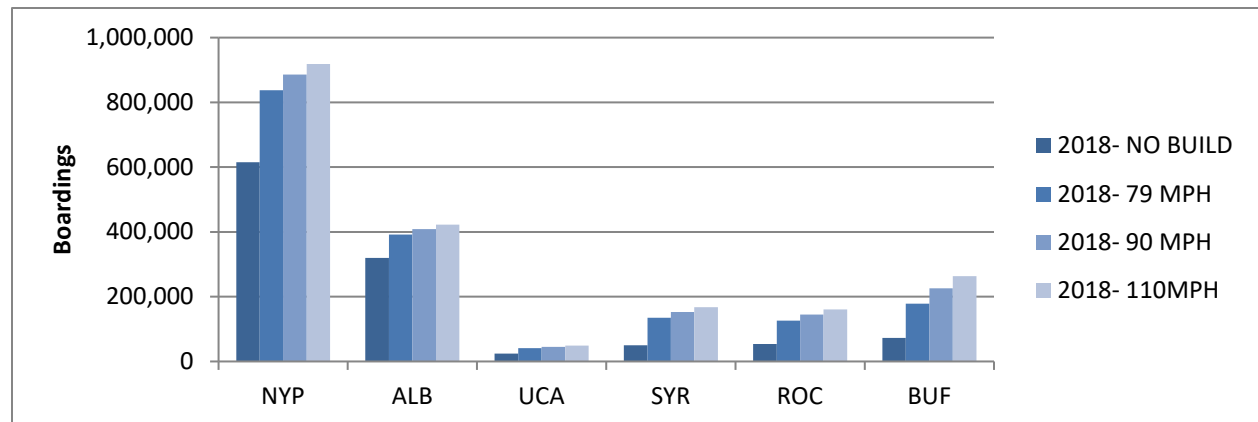


Exhibit B-68 and Exhibit B-69: 2018 - % Change in 2018 Boardings

% Change	NYP	ALB	UCA	SYR	ROC	BUF
79 & No-Build	36%	23%	67%	169%	135%	146%
90 & No-Build	44%	28%	83%	205%	170%	212%
110 & No-Build	49%	32%	98%	234%	200%	263%

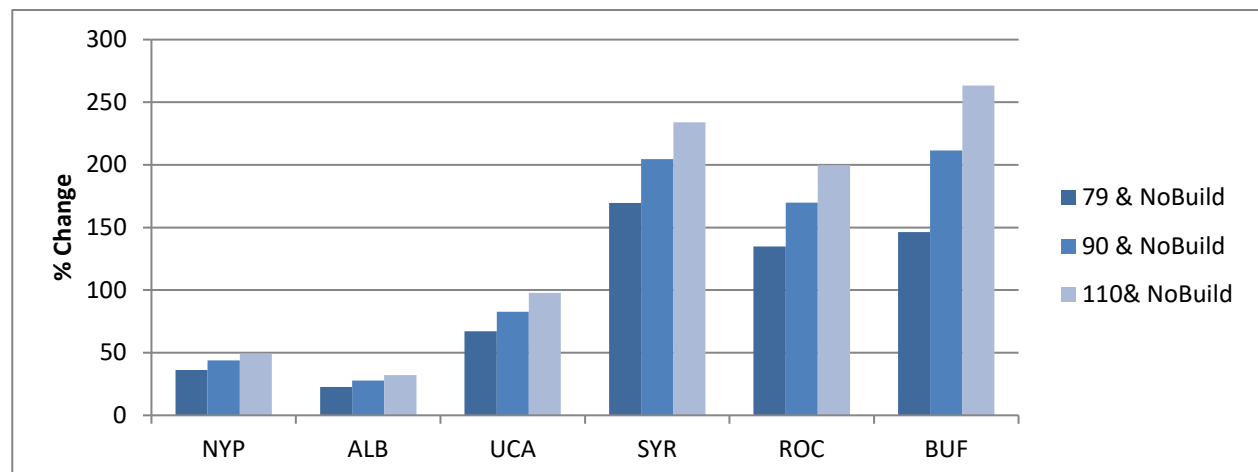


Exhibit B-70 and Exhibit B-71: 2035 Boardings

Total Boardings	NYP	ALB	UCA	SYR	ROC	BUF
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2035- NO BUILD	696,605	309,897	26,422	55,228	60,668	75,776
2035- 79 MPH	942,759	383,219	43,238	139,036	136,010	190,973
2035- 90 MPH	991,414	401,010	47,879	159,755	158,121	241,504
2035- 110MPH	1,026,275	416,012	51,940	176,484	176,144	284,597

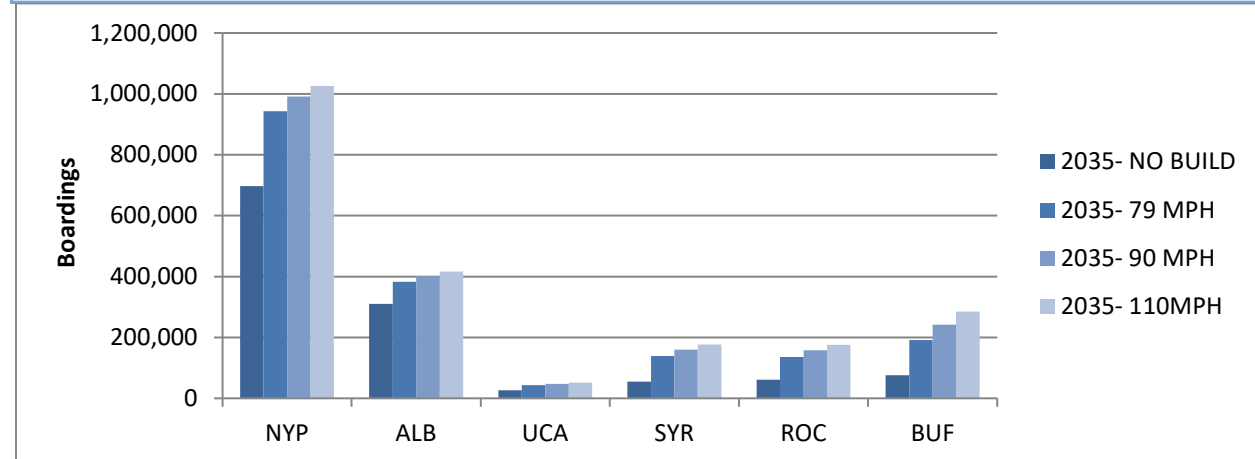
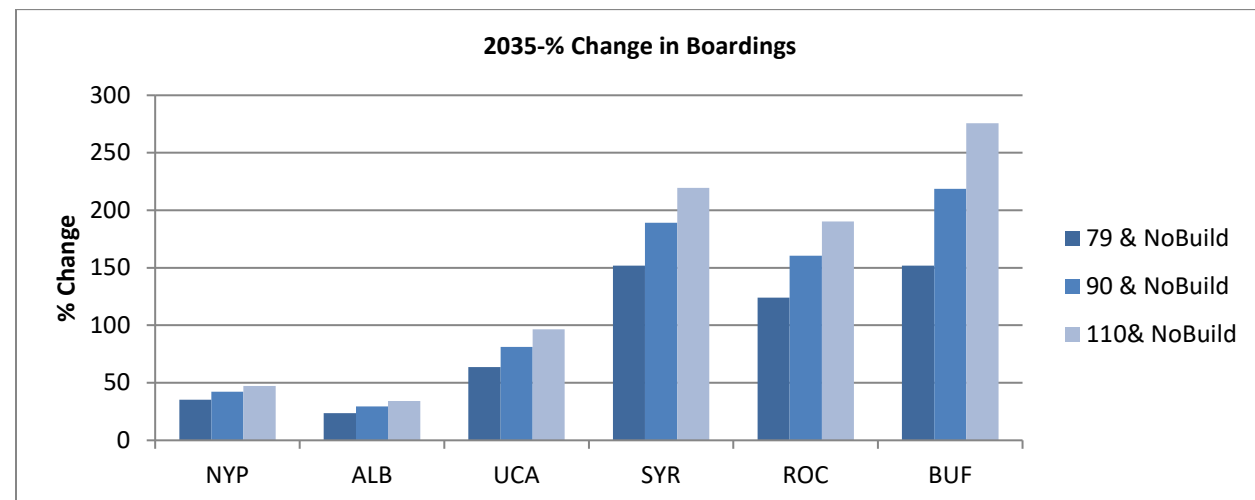


Exhibit B-72 and Exhibit B-73: 2035 Boardings

% Change	NYP	ALB	UCA	SYR	ROC	BUF
79 & No-Build	35%	24%	64%	152%	124%	152%
90 & No-Build	42%	29%	81%	189%	161%	219%
110& No-Build	47%	34%	97%	220%	190%	276%



6.3 Major Market to Major Market Ridership

As Exhibits B-70 – B-79 shows, when considering the major market MPO's and their respective stations on the line, ridership consistently increases with speed and time (2018 vs. 2035).

Under all scenarios, the greatest ridership exists in the NYC – Albany market, however this does not represent the greatest percent gain in ridership. From the 2009 existing conditions to the 2035 110 mph scenario, ridership in this market pair increases by 27 percent, from approximately 320,000 to 409,009, as shown in Exhibits B-63 and B-72. In comparison, Between NYP and Buffalo ridership increases 690 percent under the same time frame and speed parameters, the greatest percent increase between any MPO pair.

In general, the greatest percent ridership gains are always a result of ridership between NYC MPO and the Western Corridor (Utica, Syracuse, Rochester and Buffalo). While the greatest gains and overall boardings from the NYC MPO to a Western Corridor MPO is from NYC MPO to the Buffalo MPO, ridership between the Utica, Syracuse and Rochester MPO's to the NYC MPO is forecast to greatly increase with HSIPR. Rochester to the NYC MPO is projected to have a 419 percent increase, Syracuse 262 percent, and Utica 86 percent, under the 2035 110 mph scenario, all far greater percentage gains than the NYC MPO to the Albany MPO market.

From a pure boarding perspective, the greatest number of gains is projected to occur in the NYC to Buffalo MPO market, increasing by 207,550 annual riders from 2009 to the 2035 110 mph scenario, as shown in Exhibit B-63 and B-72. The NYC to Rochester MPO follows behind with an anticipated increase of almost 92,000 and Albany follows closely behind Rochester with the third greatest physical gains in boardings, expected to reach 89,000. Projections also show the Albany MPO to Buffalo MPO will experience a large percentage increase of 416 percent, an increase of over 46,000 boardings per year in the 2035 110 mph scenario.

High percentage gains are projected between western corridor cities, but because of their low existing ridership, this does not result in large boardings between these cities as compared to the existing auto and bus ridership numbers discussed in Section 4.0. The following is a brief assessment of each of the major market to major market Exhibits.

Exhibit B-74: Major Market to Major Market Rail Boardings							
2009 Existing Conditions	NYC MPO*	Albany MPO**	Utica MPO***	Syracuse MPO	Rochester MPO	Buffalo MPO****	Total
NYC MPO*	0	320,155	19,858	29,787	23,427	29,881	423,108
Albany MPO**	320,155	0	2,082	7,013	8,224	11,133	348,607
Utica MPO***	19,858	2,082	0	819	1,421	2,480	26,660
Syracuse MPO	29,787	7,013	819	0	1,794	6,466	45,879
Rochester MPO	23,427	8,224	1,421	1,794	0	1,862	36,728
Buffalo MPO****	29,881	11,133	2,480	6,466	1,862	0	51,821
Total	423,108	348,607	26,659	45,878	36,728	51,821	932,801
<i>Source: Amtrak 2009</i>							

As Exhibit B-74 indicates, there were 932,801 rail boardings in 2009 between major markets. The greatest number of boardings, 45 percent, involves travel to/from NYC. Albany is the second most popular origin/destination, with 37 percent of the total market share. The major market share of any one place then drastically drops off, with the Buffalo market comprising 6 percent, the next largest major market share.

The most frequented market pair is the NYC - Albany market, constituting over 34 percent of the entire 2009 rail market. Although the NYC- Buffalo Market has the second greatest number of boardings, it only totals 3 percent of the entire Empire Corridor Rail Market, as does the New York to Syracuse market. Along the western corridor, Albany – Buffalo comprises only 1 percent of the rail market.

Exhibit B-75: 2012 Major Market to Major Market Rail Boardings							
2012 Base Year	NYC MPO*	Albany MPO**	Utica MPO***	Syracuse MPO	Rochester MPO	Buffalo MPO****	Total
NYC MPO*		321,914	20,527	31,101	26,949	37,951	438,442
Albany MPO**	321,914		2,038	6,690	7,785	10,729	349,156
Utica MPO***	20,527	2,038		813	1,393	2,566	27,337
Syracuse MPO	31,101	6,690	813		1,776	6,659	47,039
Rochester MPO	26,949	7,785	1,393	1,776		2,174	40,077
Buffalo MPO****	37,951	10,729	2,566	6,659	2,174		60,079
Total	438,442	349,156	27,337	47,039	40,077	60,079	962,130
Source:							

Base year projections indicate there will be 962,130 rail boardings between major markets in 2012, a 3 percent increase over 2009 figures, as shown in Exhibit B-74. The greatest number of boardings, 45 percent, continues to be for travel to/from NYC. Albany remains the second most popular origin/destination, with 36 percent of the total market share. Consistent with 2009 figures, Buffalo constitutes the next greatest market share, at 6 percent of the total boardings.

The most frequented market pair is the NYC - Albany market, constituting 33 percent of the entire 2012 rail market. NYC- Buffalo Market has the second greatest number of boardings, totaling 4 percent of the entire Empire Corridor Rail Market, a slight increase over 2009 conditions. Along the western corridor, Albany – Buffalo is projected to continue to comprise only 1 percent of the rail market.

Exhibit B-76: 2018 No-Build Major Market to Major Market Rail Boardings							
2018 No-Build	NYC MPO*	Albany MPO**	Utica MPO***	Syracuse MPO	Rochester MPO	Buffalo MPO****	Total
NYC MPO*		317,570	20,368	31,352	36,767	60,145	466,202
Albany MPO**	317,570		2,041	6,814	8,133	10,784	345,342
Utica MPO***	20,368	2,041		822	1,448	2,498	27,177
Syracuse MPO	31,352	6,814	822		1,860	6,490	47,338
Rochester MPO	36,767	8,133	1,447	1,860		1,955	50,162
Buffalo MPO****	60,145	10,784	2,498	6,490	1,955		81,872
Total	466,202	345,342	27,177	47,338	50,162	81,872	1,018,093

Then 2018 No-Build scenario projections indicate there will be 1,018,093 rail boardings between major markets, a 5 percent increase over 2012 base – year figures, as shown in Exhibit B-75. The NYC market share increases slightly to 46 percent. Albany remains the second most popular origin/destination, but loses some of its market share, dropping to 31 percent of the total market over 2012 figures. Buffalo is anticipated to continue holding the third greatest market share, while increasing to 8 percent of the total boardings.

The most frequented market pair is the NYC – Albany market, constituting 31 percent of the entire 2018 no-build rail market, a 2 percent drop from the base-year. Meanwhile NYC – Buffalo Market has the second greatest number of boardings, increasing to 6 percent of the entire Empire Corridor Rail Market. Along the western corridor, Albany – Buffalo is projected to continue to comprise only 1 percent of the rail market.

Exhibit B-77: 2018 79 mph Major Market to Major Market Rail Boardings							
2018 79 mph	NYC MPO*	Albany MPO**	Utica MPO***	Syracuse MPO	Rochester MPO	Buffalo MPO****	Total
NYC MPO*		367,100	31,778	93,802	92,778	159,794	745,251
Albany MPO**	367,100		4,144	16,020	16,865	34,558	438,686
Utica MPO***	31,778	4,144		1,181	2,514	6,812	46,428
Syracuse MPO	93,802	16,020	1,181		2,544	13,579	127,126
Rochester MPO	92,778	16,865	2,514	2,544		3,428	118,128
Buffalo MPO****	159,794	34,558	6,812	13,579	3,428		218,171
Total	745,251	438,686	46,428	127,126	118,128	218,171	1,693,790
<i>Source:</i>							

As shown in Exhibit B-77, 2018 79 mph projections indicate there will be 1,693,790 rail boardings between major markets, a 76 percent increase over 2012 base-year figures, and a 66 percent increase over 2018 no-build figures. The NYC market share decreases slightly to 44 percent, as travel between other stations is anticipated to increase. Albany remains the second most popular origin/destination, but also loses some of its market share, dropping to 26 percent of the total market. Buffalo is anticipated to continue to increase its share of the market, comprising 13 percent of the total 2018 79 mph boardings. This indicates a 261 percent increase, or over 158,000 additional boardings, over base-year conditions. Projections also anticipate the NYC-Syracuse market will have a great rise in boardings, increasing by over 62,000 riders, or 201 percent from base-year projections.

The most frequented market pair is the NYC - Albany market, 22 percent of the entire 2018 79 mph rail market. While this indicates a drop in the overall market share, boardings from New York to Albany actually increased by 16 percent over 2018 no-build figures, and 14 percent over base – year figures. Meanwhile the NYC – Buffalo market has the second greatest number of boardings, increasing to 9 percent of the entire Empire Corridor Rail Market. This is an increase of over 121,000 boardings, 321 percent, over base-year figures. The Albany – Buffalo market is projected to maintain a small market share, at 2 percent, yet boardings increases by 23,829, or 222 percent over 2012 figures.

ExhibitB-78: 2018 90 mph Major Market to Major Market Rail Boardings							
2018 90 mph	NYC ¹	Albany ²	Utica ³	Syracuse	Rochester	Buffalo ⁴	Total
NYC MPO*		367,268	32,838	102,119	104,482	201,013	807,720
Albany MPO**	367,268		4,817	19,560	21,013	47,003	459,660
Utica MPO***	32,838	4,817		1,331	3,097	9,534	51,618
Syracuse MPO	102,119	19,560	1,331		2,927	17,693	143,630
Rochester MPO	104,482	21,013	3,097	2,927		4,020	135,539
Buffalo MPO****	201,013	47,003	9,534	17,693	4,020		279,263
Total	807,720	459,660	51,618	143,630	135,539	279,263	1,877,430
¹ Includes New York Penn, Yonkers and Croton Harman							
² Includes Albany/Rensselaer, Saratoga and Schenectady							
³ Includes Utica and Rome							
⁴ Includes Buffalo Exchange, Buffalo Depew and Niagara							

As shown in Exhibit B-78, 2018 90 mph projections indicate there will be 1,877,430 rail boardings between major markets, a 95 percent increase over 2012 base-year figures, and a 84 percent increase over 2018 no-build figures. While remaining the most frequented origin/destination, the NYC market share decreases slightly to 43 percent, as travel between other stations continues to increase. Albany remains the second most popular origin/destination, but also drops to 24 percent of the total market. Buffalo continues to increase its market share to 15 percent of the total boardings. This indicates a 365 percent increase, or over 219,000 additional boardings, over base-year conditions.

NYC-Albany remains as the most frequented market pair, yet drops to 20 percent of all 2018 90 mph boardings. Still, this indicates a net increase of 16 percent over 2018 no-build figures, and 14 percent over base-year figures. The NYC-Buffalo market has the second greatest number of boardings, recognizing an increase in the market share, garnering 11 percent of the entire Empire Corridor rail market. This is an increase of over 163,000 boardings, 429 percent higher than base-year figures. The Albany – Buffalo market continues to have a small overall market share, at 3 percent, but boardings between the two cities actually increase by 364 percent over base-year conditions.

Exhibit B-79: 2018 110 mph Major Market to Major Market Rail Boardings							
2018 110 mph	NYC ¹	Albany ²	Utica ³	Syracuse	Rochester	Buffalo ⁴	Total
NYC ¹		367,391	34,028	108,669	114,396	230,674	855,157
Albany ²	367,391		5,406	22,064	24,432	57,478	476,770
Utica ³	34,028	5,406		1,391	3,516	11,876	52,216
Syracuse	108,669	22,064	1,391		3,269	21,928	157,321
Rochester	114,396	24,432	3,515	3,269		4,556	150,168
Buffalo ⁴	230,674	57,478	11,876	21,928	4,556		326,512
Total	855,157	476,770	56,216	157,321	150,168	326,512	2,022,144
¹ Includes New York Penn, Yonkers and Croton Harman							
² Includes Albany/Rensselaer, Saratoga and Schenectady							
³ Includes Utica and Rome							
⁴ Includes Buffalo Exchange, Buffalo Depew and Niagara							

The 2018 110 mph projections indicate there will be 2,022,144 rail boardings between major markets, a 110 percent increase over 2012 base-year figures, and a 99 percent increase over 2018 no-build figures; see Exhibit B-79. As the largest city on the corridor, NYC remains the most popular origin/destination, with 43 percent of the entire rail major market boardings. Albany remains the second most popular origin/destination, with 24 percent of the total market. Buffalo continues to increase its market share to 16 percent of the total boardings. This indicates a 443 percent increase, or over 266,000 additional boardings, over base-year conditions.

NYC-Albany remains as the most frequented market pair, with 18 percent of all boardings. Projections indicate a net increase of 45,477, in this market, 14 percent greater than base-year figures, but a nominal overall increase between the 90 and 110 mph scenarios. The NYC-Buffalo market has the second greatest number of boardings, with 11 percent of the entire Empire Corridor rail market. This is an increase of almost 193,000 boardings, 507 percent higher than base-year figures. The Albany– Buffalo market continues to have a small overall market share, at 3 percent, but boardings between the two cities greatly increase by 436 percent over base-year conditions.

Exhibit B-80: 2035 No-Build Major Market to Major Market Rail Boardings							
2035 No-Build	NYC 1	Albany 2	Utica 3	Syracuse	Rochester	Buffalo 4	Total
NYC1		338,627	22,414	32,425	38,833	59,707	492,005
Albany 2	338,627		1,901	5,835	7,233	9,347	362,944
Utica3	22,414	1,901		807	1,438	2,857	29,416
Syracuse	32,425	5,835	807		4,637	8,273	51,976
Rochester	38,833	7,233	1,437	4,637		4,511	56,560
Buffalo 4	59,707	9,347	2,857	8,273	4,511		84,694
Total	492,005	362,944	29,416	51,976	56,650	84,694	1,077,685
<i>1Includes New York Penn, Yonkers and Croton Harman</i>							
<i>2Includes Albany/Rensselaer, Saratoga and Schenectady</i>							
<i>3Includes Utica and Rome</i>							
<i>4Includes Buffalo Exchange, Buffalo Depew and Niagara</i>							

The 2035 no-build projections as shown in Exhibit B-80 indicate there will be 1,077,685 rail boardings between major markets, a 12 percent increase over 2012 base – year figures. NYC has the most boardings, capturing 46 percent of the market, a 12 percent increase over the base – year. Albany remains the second most popular origin/destination, with 33 percent of the total market. Buffalo constitutes the next greatest market share, at 6 percent of the total boardings. This indicates a 40 percent increase, or over 24,000 additional boardings over base – year conditions.

NYC - Albany remains as the most frequented market pair, with 31 percent of all boardings. This indicates an increase of 5 percent over base-year figures. The NYC – Buffalo market has the second greatest number of boardings, with 6 percent of the entire Empire Corridor rail market. This is a net increase of 21,755 boardings, or 57 percent greater than base – year figures. However, this is a net decrease of 438 boardings, 1 percent lower, than the 2018 no-build scenario. The Albany – Buffalo market is anticipated to decline by 13 percent over base-year conditions under a no-build scenario.

Exhibit B-81 2035 79 mph Major Market to Major Market Rail Boardings							
2035 79 mph	NYC ¹	Albany ²	Utica ³	Syracuse	Rochester	Buffalo ⁴	Total
NYC ¹		408,510	34,232	91,692	96,535	164,461	795,430
Albany ²	408,510		3,919	14,454	15,935	33,144	475,962
Utica ³	34,232	3,919		1,156	2,543	7,818	49,668
Syracuse	91,692	14,454	1,156		5,347	17,643	130,292
Rochester	96,535	15,935	2,543	5,347		6,957	127,317
Buffalo ⁴	164,461	33,144	7,818	17,643	6,957		230,023
Total	795,430	475,962	49,668	130,292	127,317	230,023	1,808,692
¹ <i>Includes New York Penn, Yonkers and Croton Harman</i>							
² <i>Includes Albany/Rensselaer, Saratoga and Schenectady</i>							
³ <i>Includes Utica and Rome</i>							
⁴ <i>Includes Buffalo Exchange, Buffalo Depew and Niagara</i>							

Projections indicate there will be 1,808,692, rail boardings between major markets under a 2035 79 mph alternative. This represents an 87 percent increase over 2012 base-year figures as shown in Exhibit B-75. NYC has the most boardings, capturing 44 percent of the market, an 81 percent increase over the base-year. Albany remains the second most popular origin/destination, with 26 percent of the total market. Buffalo constitutes the next greatest market share, at 13 percent of the total boardings, a large market share increase over base-year and 2035 no-build scenarios. This is a net increase of almost 170,000 boardings per year, or 282 percent, over base-year conditions.

NYC-Albany remains as the most frequented market pair, with 23 percent of all boardings. This indicates an increase of 27 percent over base-year figures. The NYC-Buffalo Market has the second greatest number of boardings, with 9 percent of the entire Empire Corridor rail market. This is a net increase of 126,510 boardings, or 333 percent greater than base-year figures. The Albany-Buffalo market is anticipated to hold only 2 percent of the 2035 79 mph market, but will increase by 208 percent, or 22,415 more boardings than the base-year conditions.

Exhibit B-82: 2035 90 mph Major Market to Major Market Rail Boardings							
2035 90 mph	NYC ¹	Albany ²	Utica ³	Syracuse	Rochester	Buffalo ⁴	Total
NYC ¹		408,881	35,799	101,207	110,559	205,556	862,002
Albany ²	408,881		4,598	17,979	20,220	46,212	497,890
Utica ³	35,799	4,598		1,306	3,156	11,076	55,934
Syracuse	101,207	17,979	1,306		5,723	23,235	149,449
Rochester	110,559	20,220	3,156	5,723		7,959	147,617
Buffalo ⁴	205,556	46,212	11,076	23,235	7,959		294,037
Total	862,002	497,890	55,934	149,449	147,617	294,037	2,006,929
¹ <i>Includes New York Penn, Yonkers and Croton Harman</i>							
² <i>Includes Albany/Rensselaer, Saratoga and Schenectady</i>							
³ <i>Includes Utica and Rome</i>							
⁴ <i>Includes Buffalo Exchange, Buffalo Depew and Niagara</i>							

As shown in Exhibit B-82, projections indicate there will be 2,006,929 rail boardings between major markets under a 2035 90 mph alternative. This represents a 108 percent increase over 2012 base-year figures. NYC has the most boardings, capturing 43 percent of the market, a 96 percent increase over the base-year. Albany remains the second most popular origin/destination, with 25 percent of the total market. Buffalo constitutes the next greatest market share, at 15 percent of the total boardings, a net increase of 233,957 boardings per year, or 389 percent, over base-year conditions.

NYC-Albany remains as the most frequented market pair, with 23 percent of all boardings. This indicates an increase of 27 percent over base-year figures. The NYC-Buffalo market has the second greatest number of boardings, with 10 percent of the entire Empire Corridor rail market. This is a net increase of 167,604 boardings, or 441 percent greater than base-year figures. Although the Albany–Buffalo market is anticipated to hold only 2 percent of the 2035 90 mph market, the overall boardings for this market will increase by 330 percent, or 35,483 more boardings than the base-year conditions.

Exhibit B-83: 2035 110 mph Major Market to Major Market Rail Boardings							
2035 110 mph	NYC ¹	Albany ²	Utica ³	Syracuse	Rochester	Buffalo ⁴	Total
NYC ¹		409,082	37,021	107,785	121,555	237,431	912,874
Albany ²	409,082		5,185	20,604	23,876	57,504	516,250
Utica ³	37,021	5,185		1,378	3,626	14,047	61,256
Syracuse	107,785	20,604	1,378		6,059	29,154	164,980
Rochester	121,555	23,876	3,625	6,059		8,928	164,043
Buffalo ⁴	237,431	57,504	14,047	29,154	8,928		347,065
Total	912,874	516,250	61,256	164,980	164,043	347,065	2,166,468
¹ <i>Includes New York Penn, Yonkers and Croton Harman</i>							
² <i>Includes Albany/Rensselaer, Saratoga and Schenectady</i>							
³ <i>Includes Utica and Rome</i>							
⁴ <i>Includes Buffalo Exchange, Buffalo Depew and Niagara</i>							

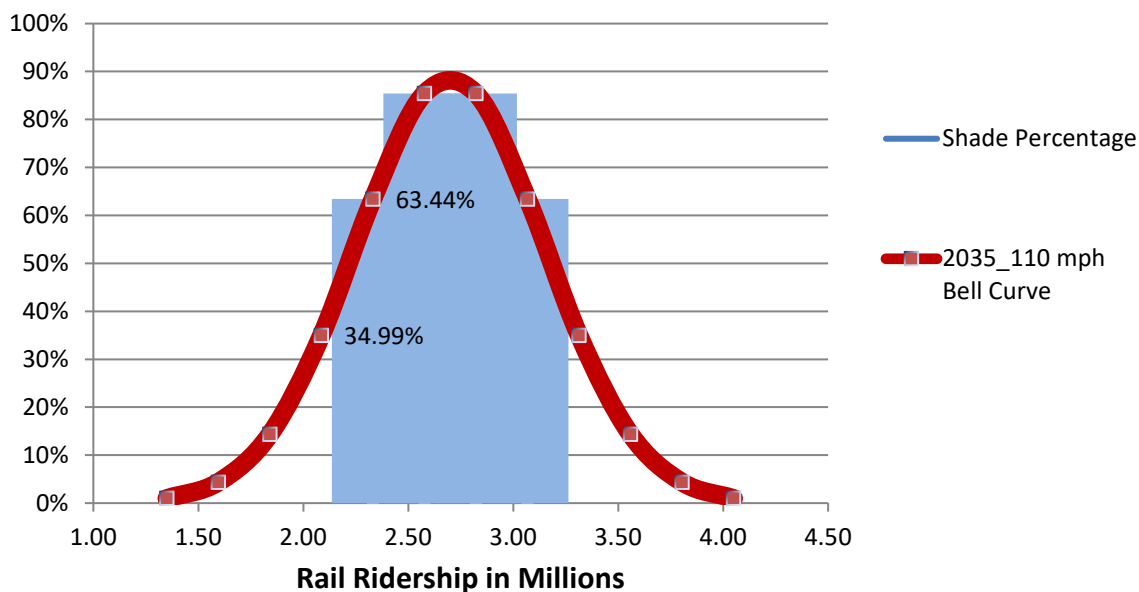
As shown in Exhibit B-83, projections indicate there will be 2,166,648 rail boardings between major markets under a 2035 110 mph alternative. This represents a 125 percent increase over 2012 base-year figures. NYC has the most boardings, capturing 42 percent of the market, a 108 percent increase over the base-year. Albany remains the second most popular origin/destination, with 24 percent of the total market. Buffalo constitutes the next greatest market share, at 16 percent of the total boardings, a net increase of 286,985 boardings per year, or 478 percent, over base-year conditions.

NYC-Albany remains as the most frequented market pair, while dropping to 19 percent of all boardings 2035 110 mph boarding. Still, the actual increase in this market is 27 percent over base-year figures. The NYC- Buffalo market has the second greatest number of boardings, with 11 percent of the entire Empire Corridor rail market. This is a net increase of 199,480 boardings, or 525 percent greater than base-year figures. Although the Albany-Buffalo market is anticipated to hold only 3 percent of the 2035 110 mph market, the overall boardings for this market will increase by 435 percent, or 46,775 more boardings than the base-year conditions.

6.4 Maximum Total Ridership Range

Understanding that the model forecasts ridership into future years based on best available data and sensitivities for mode selection utilized from other studies rather than developed directly from travel market stated user preference surveys – a normal distribution curve stating confidence in a range of potential forecasted demand for 110 mph was developed. As Exhibit B-84 shows a one standard deviation confidence interval shows demand at approximately 2.25 million riders at the low end and 3.2 million on the high end. The mean shown is the max 110 alternative ridership forecast in this study at approximately 2.79 million riders.

Exhibit B-84: Ridership Forecast Normal Distribution Confidence Bell



6.5 Comparative Mode Analysis

All factors and sensitivities which were input into the model were performed on a corridor wide basis; therefore, the most accurate analysis of the comparative modes of trips has also been done on a corridor wide basis. This section assesses rail forecast results in light of forecast results for other travel modes and the resulting shifts from one mode of travel to another given shifts in socio-economic factors and the resultant changes in rail ridership. Although city pair level changes in travel modes were evaluated and forecasts for these results are available in Section 10.3-Appendix C, a detailed assessment of these results is not provided in this Section. This is based upon the amount of information, which is extensive in nature, blunting the impact of the evaluative process, but as also noted elsewhere in this document – because the model is based on generalized sensitivities for mode selection and change rather than market to market sensitivities based on user preference surveys – which were not performed, as well as the

complexity of subjective assignment of mode output information into MPO level geographies – the results have some irregularities not consistent with corridor wide or transportation planning principals as developed in evaluation of all the data in this study. Given this backdrop however, trends in smaller scale markets follow almost exactly those of the corridor wide trends in shifts from studied competitive modes to rail. Section 10.3-*Appendix C* describes the irregularities encountered, describes why they may be occurring, and directly states what likely adjustments are required to rationalize the entire data set. Given the complexities noted above, the whole of the output results from the model are consistent and tell a story about how the alternatives would compete with other travel modes compared to the no-build condition.

It should be understood that this corridor is overwhelmingly auto dominated and that any small shift from the auto market (in terms of percentage), can bolster the growth of the other modes. For the purpose of this analysis, the study of the combined category of air, bus and rail trips is being termed “public transportation” (PT). Analysis of the Exhibit B-85 from the base year 2012 to 2018 to 2035 shows growth in all modes of travel and therefore in the total travel market. This increase is generally based on the growth of the socio-economic conditions such as population and employment throughout the whole region. The percentage of trips made on air, bus and rail as compared to the total market increases from the base year of 2012 and the no build scenarios in 2018 and 2035, both as a sum and individually, signifying general growth of the corridor travel market without any service improvements to any of the PT modes.

As shown in Exhibit B-85, for the different scenarios (79 mph, 90 mph and 110 mph maximum operating speed) for both the forecast years, 2018 and 2035 it can be concluded that rail mode draws its share from all the other modes. Reduction in air trips account for approximately 47.87 percent for rail trips growth in 2018 and 48.61 percent for rail trips growth in 2035. Reduction in bus trips account for approximately 29.70 percent of the growth whereas the reduction in the auto traffic accounts for 22.43 percent of the growth of rail trips (comparison for 2035, 110 mph service option).

Exhibit B-85 2035 90 mph Major Market to Major Market Rail Boardings

Corridor wide All to All Trips and Percentages- All Scenarios

MODE SHARE FOR EACH SCENARIO-NUMBER OF TRIPS						MODE SHARE FOR EACH SCENARIO-PERCENTAGE					
YEAR	CAR	RAIL	BUS	AIR	TOTAL	YEAR	CAR	RAIL	BUS	AIR	TOTAL
2009	210,977,488	1,298,706	4,593,637	2,411,033	219,280,865	2009	96.213%	0.592%	2.095%	1.100%	100.00%
2012	212,177,650	1,346,466	5,677,047	2,466,640	221,667,803	2012	95.719%	0.607%	2.561%	1.113%	100.00%
2018 NB	217,523,410	1,409,954	5,367,642	2,422,387	226,723,393	2018 NB	95.942%	0.622%	2.367%	1.068%	100.00%
2018 79 MPH	217,366,490	2,139,001	5,159,785	2,058,118	226,723,393	2018 79 MPH	95.873%	0.943%	2.276%	0.908%	100.00%
2018 90 MPH	217,311,208	2,334,521	5,112,698	1,964,965	226,723,393	2018 90 MPH	95.849%	1.030%	2.255%	0.867%	100.00%
208 110 MPH	217,263,088	2,489,382	5,073,216	1,897,707	226,723,393	208 110 MPH	95.827%	1.098%	2.238%	0.837%	100.00%
2035 NB	230,454,881	1,595,021	7,798,863	2,701,574	242,550,340	2035 NB	95.013%	0.658%	3.215%	1.114%	100.00%
2035 79 MPH	230,302,244	2,390,539	7,551,050	2,306,506	242,550,340	2035 79 MPH	94.950%	0.986%	3.113%	0.951%	100.00%
2035 90 MPH	230,243,037	2,603,352	7,494,250	2,209,701	242,550,340	2035 90 MPH	94.926%	1.073%	3.090%	0.911%	100.00%
2035 110 MPH	230,190,311	2,774,683	7,448,486	2,136,861	242,550,340	2035 110 MPH	94.904%	1.144%	3.071%	0.881%	100.00%

6.5.1 Corridor wide Trips by Comparative Travel Modes

The analysis of trips between the no-build scenarios in 2018 and 2035 and the 79mph, 90mph and 110 mph service options for each of these years shows a trend of increasing rail ridership and a decrease in all the other three modes of travel, air, auto and bus, (see Exhibits B-86 and B-87) signifying that the service improvements proposed are leading up to rail being more competitive against each of the other modes of travel.

Exhibit B-86: Market Share Changes in Air, Bus & Rail as % of Total Travel Market-2018

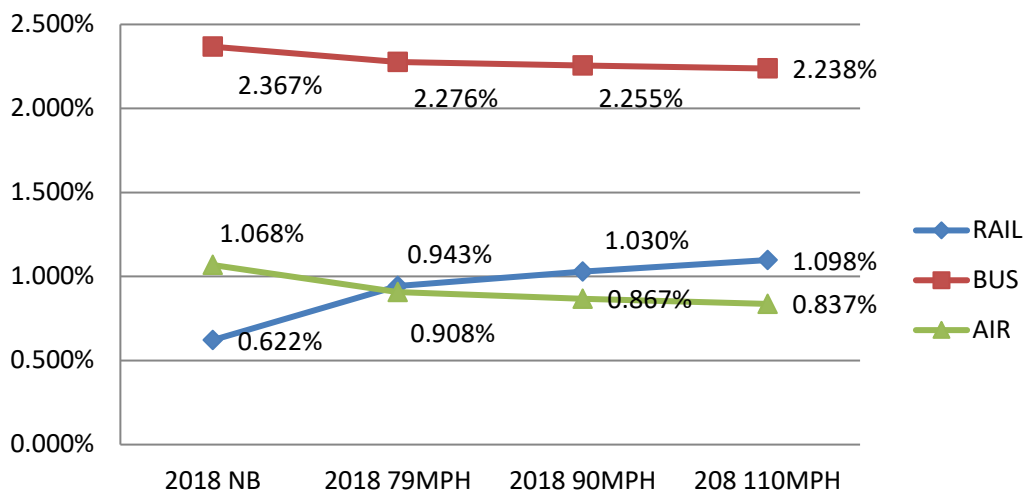
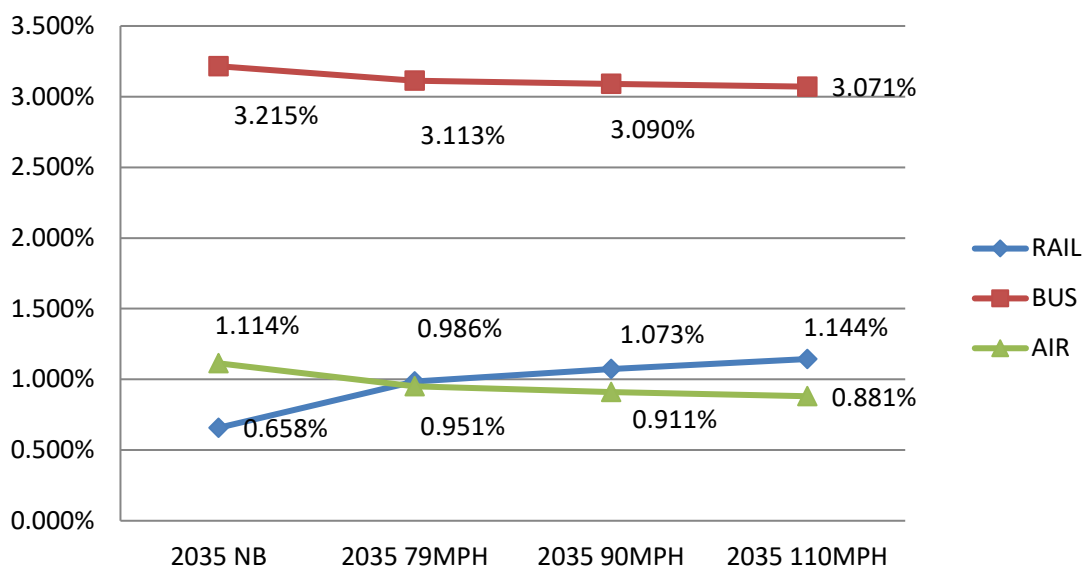


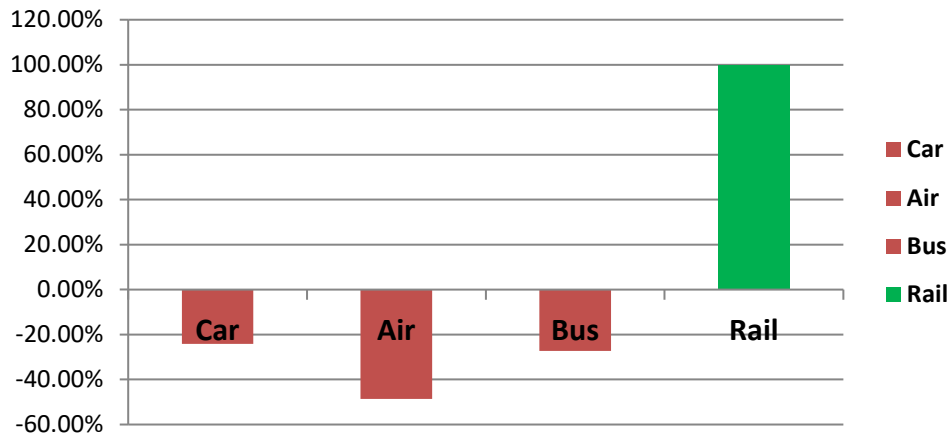
Exhibit B-87: Market Share Changes in Air, Bus & Rail as % of Total Travel Market-2035



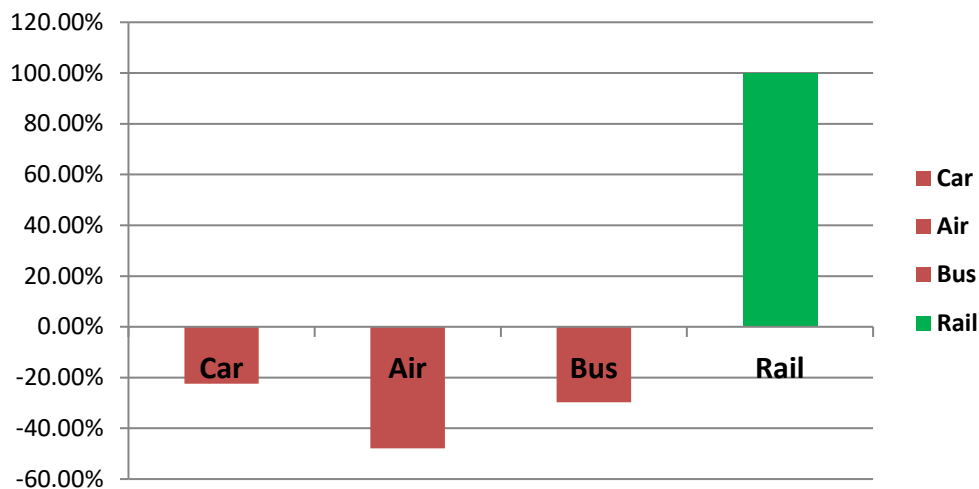
The following set of Exhibits identify how the 110 mph alternative draws from other markets to build ridership in both 2018 and 2035. Only 110 is shown here as the relationship trends identified below hold under all options. Despite growth in the absolute numbers of rail trips between the 2018 NB-2018, 110 mph and 2035 NB-2035, 110 mph (1,079,428 for 2018 and 1,179,661 for 2035) the growth rate of the rail trips as percentage of the overall market for the same situation is slightly more in 2018 than in 2035 (76% for 2018 and 74% for 2035) (See Exhibits B-88 & B-90). This indicates that the reduced travel time along the corridor has more effect on ridership than increased frequency of service. Also this decrease can be attributed to the loss of ridership due to the likely continued dispersed population growth in the Albany, Utica, Syracuse, Rochester and Buffalo market which would eventually lead to lesser propensity of the population base in these areas to use the rail service as compared to auto.

Exhibit B-88: 2018 Changes in Mode Share for 110 mph Alternative									
Mode	2009 Existing Condition		2018Base (no HSR)		2018 with 110 mph		Base to 110	2018 Mode Conversion	
	Annual Trips	Share %	Annual Trips	Share %	Annual Trips	Share %	Percent Change	Trips	% Share Conversion
Car	210,977,488	96.2	217,523,410	95.94	217,263,088	95.83	-0.12%	-260,322	-24.12%
Air	2,411,033	1.10	2,422,387	1.07	1,897,707	0.84	-21.66%	-524,680	-48.61%
Bus	4,593,637	2.09	5,367,642	2.37	5,073,216	2.24	-5.49%	-294,426	-27.28%
Rail	1,298,706	0.59	1,409,954	0.62%	2,489,382	1.10	76.56%	1,079,428	100.00%

With increase in speed within each of the service years, 2018 and 2035, rail trips have drawn more from air trips followed by bus trips and ultimately the auto trips as shown in Exhibit B-89. Evaluating Exhibit B-88 and B-90 compared to the baseline, air ridership shows a decline of 22 percent and 21 percent respectively for the years 2018 and 2035, between the no-build scenarios and the 110 mph service options. Similarly the bus ridership shows a decline of 5.5 percent and 4.5 percent and the auto ridership a decline of 0.12 percent and 0.11 percent. Despite the modest decline in auto ridership it is clear that enhancements in rail service are dampening growth in auto trips and thereby keeping Thruway congestion at bay.

Exhibit B-89: 2018 - Market Relationship between Rail Trips and other Modes under 110 mph Alternative**Exhibit B-90: 2035 Changes in Mode Share for 110 mph Alternative**

Mode	2009 Base Year		2035 no HSR		2035 with 110 mph		Base to 110	2035 Mode Conversion	
	Annual Trips	Share %	Annual Trips	Share %	Annual Trips	Share %	Percent Change	Trips	% of Total
Car	210,977,488	96.21	230,454,880	95.01	230,190,310	94.90	-0.11%	-264,570	-22.43
Air	2,411,033	1.10	2,701,574	1.11	2,136,860	0.88	-20.90%	-564,714	-47.87
Bus	4,593,637	2.09	7,798,863	3.22	7,448,486	3.07	-4.49%	-350,377	-29.70
Rail	1,298,706	0.59	1,595,021	0.66	2,774,682	1.14	73.96%	1,179,661	100.00

Exhibit B-91: 2035 - Market Relationship between Rail Trips and other Modes under 110 mph Alternative

6.5.2 Major Market Pair Analysis

Within the corridor there are three distinctive sub categories with different service characteristics in terms of the different modes of travel. The subcategories are as follows:

- NYC- Albany,
- NYC-West of Albany; and
- Albany – Areas west of Albany.

NYC-Albany

The improved rail service from the base year 2012 to 2018, 110 service options and 2035, 110 mph service reduced the travel times most in the corridor west of Albany. There is no change in travel time in the NYC-Albany market between 2018 and 2035 and between the different maximum operating speed options. This basically freezes the growth of the rail ridership for the years 2018 and 2035 irrespective of the operating plan. Though there is an increase in the total rail ridership between 2018 and 2035 reflecting the background growth of population and employment and the added frequency of service for all of the 2035 service options, rail as a percentage of the PT mode decreases due to this stagnation of the travel times between the NYC market and the Albany market. Any shift from the auto mode is primarily captured by the bus and the air modes. As has been mentioned previously the ridership trends are more sensitive to the travel times than the frequency of service and hence between 2018 and 2035 rail becomes less competitive (in terms of percentage share of the market) and both air and bus increase their market share.

NYC- West of Albany

This market shows a significant savings in the travel times which is reflected in the growth of the rail ridership along this corridor, both in terms of percentage of the total market and percentage of the PT mode. Rail ridership growth is accompanied by decline almost similar to the sum of the decline of trips by bus and air, thereby signifying only a modest draw from the auto mode – which is already a small percentage of the existing mode share. The rail ridership percentage as compared to both the total market and the PT mode increases by almost 400 percent when comparing the no-build and the 110 mph service option for both 2018 and 2035. Analysis show that in this segment rail trips compete favorably with bus trips in terms of costs and speed and the very favorably with air mode in terms of cost and to reduced differential in travel time and schedule from rail enhancements.

NYC- Buffalo Market

The NYC- Buffalo market shows a travel time reduction of approximately 35 percent from the base run times and an increased frequency which provides for 12 round trips compared to four under the base condition. This translates to an increase in the rail trips between the two markets by almost 300 percent which is accompanied by a decline equivalent to the sum of the decline in air and bus ridership. This signifies that the improved rail service has minimal total reduction in auto trips between these two markets which is currently at 40,000 annual trips. For 2035, 110 mph service option, the improved service combined with total origin to destination travel times and associated costs for a rail trips becomes

competitive with time and cost associated with bus and air, thereby leading to the shift from these two modes to rail.

As mentioned above, the **Albany-West of Albany Market** shows a significant decrease in the travel times due to the improved service. This is reflected in the increase in the rail ridership which is accompanied by reduced bus trips and auto trips. With the improved rail ridership the rail mode increases significantly as a percentage of the PT mode (215% for 2018 and 265% for 2035). Even though there is reduction in the auto trips, auto remains the overwhelming choice of travel along this corridor which can be attributed to the dispersed population distribution, lack of connectivity to the rail stations and low congestion levels which make road travel an easy option. With only 80-100 miles separating some of the major markets along this corridor, car travel still holds a strong position to rail travel which connects travelers between their ultimate origin and destination in a more efficient and expedient fashion. An enhanced transit linkage plan and localized station development would engender greater localized station to station trips along the East-West Corridor.

7.0 Sensitivity Tests

A series of basis sensitivity test were run to evaluate the impact of change in key input characteristics for the HSIPR Alternatives studied. A change in magnitude of variables for population and employment, travel time, and competitive cost changes were run and resulting ridership changes evaluated.

Exhibit B-92 below identifies a generalized trend relationship between reduction in travel times and corresponding forecasted increases in ridership. This trend was extrapolated by observing the impact of assumed reduction in travel time from NYC to Buffalo based on the alternatives studied and then extending that curve based on the trend identified from those data points. This trend was then applied to the entire corridor to extrapolate a corridor wide assessment of the impact of time savings. As the trend line shows, the 110 mph speed is a 30 percent reduction in travel time for trips to Buffalo and represents a similar result in travel time for other trips where most of the ridership gains are accruing – namely between NYC and city pairs on the East-West Corridor and this travel time gain results in approximately 2.75 million riders. Extrapolating from this relationship, a corresponding 40 percent reduction in travel time or average speed of 80 mph - 40 percent greater than the no-build would result in nearly 3.25 million riders.

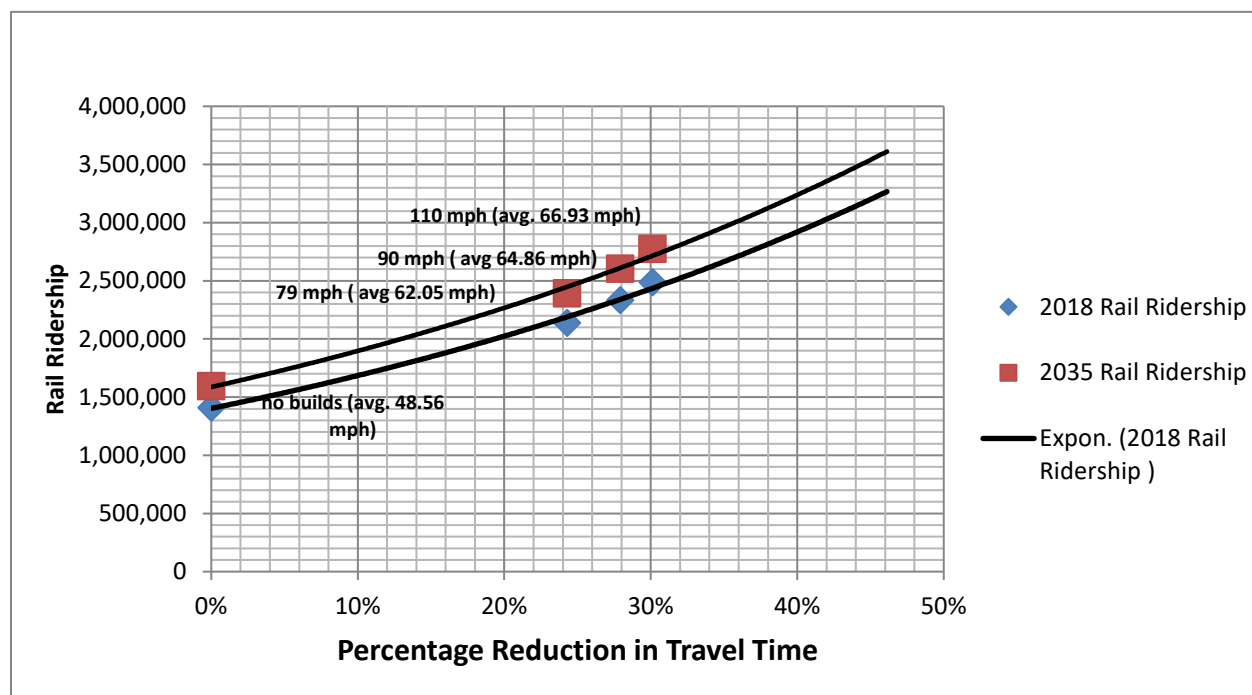


Exhibit B-92: Trends in Travel Time and Ridership

The following section indicates a variety of competitive mode cost sensitivities. What the Exhibit clearly shows is that auto cost are highly inelastic – meaning major changes in travel costs such as an increase of 25 percent and no corresponding increase in cost for rail will not accrue an increase in boardings for rail.

Higher airfares however are highly sensitive and on a percent for percent relationship 1, a 1 percent increase in air cost results in a 1 percent increase in rail ridership.

Exhibit B-93: Comparative Cost Sensitivity Tests ⁴⁰

Sensitivity Test	Cost Changes	Boardings (% change from base)	
		NYHSR	CAHSR ⁴¹
Higher HSR Fares	25% Increase	-15%	-13%
Higher Air Fares	25% Increase	23%	NA
Higher Auto Cost and Tolls	25% Increase in both	0%	NA
Combined Higher HSR and Higher Air/Auto Costs	25% Increase in fares and 50% increase in air and auto cost	12%	13%
	50% Increase in rail fares and air and auto cost	7%	31%
	100% increase in fares, 50% increase in air/car cost	-2%	-6%

⁴⁰ Auto Operating Cost Assumptions: 0.1674 \$/miles

⁴¹ California High Speed Rail Market Study – 2008

8.0 Revenue Forecast

Exhibit B-94 displays the forecasted revenue for each of the no build and build scenarios. By 2018, revenue based on the three alternative build scenarios (79, 90 and 110) will range from 66 - 97 percent greater than the corresponding No-Build condition, as shown in Exhibit B-86; and in 2035 it will range from 64 - 94 percent greater than the corresponding No-Build condition. Along with the greatest projected ridership, the greatest projected revenue is for the 2035 110 mph scenario, which at \$92.5 million is 94 percent greater than the projected 2035 no-build revenue. The revenue results are calculated from current average fares between each station pair times the ridership. A net reduction of 10 percent could be applied to account for discounted rates for regular users and promotions.

The key to evaluating these forecasts however is not in the numbers themselves but by a cost benefit type analysis that considers operating and maintenance costs and annualized capital costs over a 10 or 20 year time frame.

Exhibit B-94: Revenue Forecast by Alternative and Build Year				
	Base Year & NB	79 mph	90 mph	110 mph
2009	\$50,042,203	n/a	n/a	n/a
2012	\$51,784,687	n/a	n/a	n/a
2018	\$55,892,489	\$92,676,100	\$102,580,612	\$110,324,789
2035	\$62,547,008	\$102,442,809	\$113,114,855	\$121,578,490

Exhibit B-95: Revenue Forecast by Alternative and Build Year		
% Change	2018	2035
79 & No-Build	66%	64%
90 & No-Build	84%	81%
110 & No-Build	97%	94%

9.0 Conclusions

9.1 Market Observations

This final section summarizes key observations related to the overall forecast results as well as specific observations related to the major markets and the behavior of the other competitive modes in the face of improvements to Empire Corridor. The first and most important observation this report has identified is that a considerable market exists for the set of improved speeds and travel schedule alternatives studied in this report. This finding however is not unexpected, as similar improvements to the Amtrak Keystone Corridor yielded strong ridership growth resulting from enhanced speed and level of service. Under that project, completed in 2006, Amtrak and Pennsylvania DOT improved this 104 mile portion of the overall 394 mile corridor to top speeds of 110 mph and resulted in 20 percent year over year gains in ridership in both 2007 and 2008 – with ridership increasing to 1.2 million from about 850,000. However the success of these numbers must be evaluated in light of the cost – \$145,000 and a resultant reduction in operational subsidy of 28 cents per passenger mile to 20 cents per passenger mile.⁴² The Empire Corridor by comparison is 463 miles long and suffers from greater delays and considerably lower ridership by mile than the Keystone Corridor prior to completion of upgrades. Further comparison shows that similar speed and level of service upgrades would result in substantially greater ridership gains from 1.4 million under the no-build to 2.48 million 2018 build year for the 100 mph alternative or a 56 percent increase in ridership in the initial year. However, these comparative results should be taken in perspective – the Empire Corridor is nearly five times the size (compared to the Harrisbury to Philadelphia segment of the Keystone Corridor) and services 17 stations, is anchored to the largest metropolitan market in America and services five cities with nearly 100,000 or more persons. This comparison indicates that the Empire Corridor has significant potential and that this potential is not only untapped in its current state but the alternatives considered in this report may not have uncovered all of the potential demand in this corridor – however this is to be expected in an initial *base* demand market forecast. The section following will discuss possibilities to evaluate and expand the ridership potential in further investigations.

9.2 Empire Corridor - Key Market Characteristics Observations

It should first be noted that the alternatives studied should not be understood as traditional high speed rail alternatives. The average speeds and number of stops considered in the alternatives falls into an enhanced speed and service class of traditional Amtrak service – and perhaps the logical next step for this corridor which connects NYC – the economic engine of the U.S. to a region that has been recovering from decades of decline after the fall of manufacturing economies in the U.S. However it is important to revisit the success benchmarks identified for HSR at the beginning of this report to offer a perspective from which to evaluate the Empire Corridor as imagined under the various alternatives forecasted. The first characteristic identified was speed – those corridors between 90 mph and 110 mph were identified as emerging HSR, while those between 110 mph and 150 mph were classified as regional HSR, with over 160 mph as express HSR. The problem with these definitions is that they refer to max speeds – as does this study – rather than average speeds identified by time it takes to get from station to station in a certain travel time. As noted in this report, the optimal 110 mph max alternative studied actually only runs at an average speed of 68 mph. The second characteristic of HSR noted is distance between stations – for emerging HSR at speeds of 90 to 110 mph – the benchmark distance is a minimum of 100 miles and

⁴² <http://www.thetransportpolitic.com/2009/09/28/learning-from-the-keystone-corridor/>

optimal distance of 200 miles and a max distance of 500 miles between stations. The Empire Corridor has 17 stations on its run, with the longest distance between two stations at 80 miles. The third key characteristic is the presence of congestion in airspace and roadways serving the corridor. The Empire Corridor has a heavily congested airspace but a minimally congested roadway corridor that runs the entire length of the rail corridor studied. The fourth key is presence in a mega-region serving cities with high GDP's. The Empire Corridor is located in the largest mega-region and although many of the upstate cities served are underperforming economies – the economies of the major markets are quite large – a function of their sizes. Finally, the fifth key characteristic is the presence of regional transit linkages – to connect station areas to suburban markets and key destinations. On the Empire Corridor, there are robust major market bus transit systems – however they are not generally optimally oriented to connect to station areas – as current Amtrak service on the corridor is modest.

Evaluating this comparison, it is clear first that average speeds considered in this study are short of other comparable emerging HSR programs due to alignment constraints and operational constraints imposed by CSX. Further, given the overall length of this corridor – speeds are not truly optimal to gain maximum market share. In terms of distance between stations, whether or not this corridor is considered an emergent high speed rail corridor is unimportant – 17 stations are too many to function effectively as a regional intercity passenger service, this corridor can capture more riders at key stations by removing stops and reducing travel time – recommendations for further consideration are in the following section. It is clear that the Empire corridor is unique - although it has regional coverage and the purpose of HSR programs is to affect regional intercity travel – the number of stations present on the corridor and the schedules considered to link them make the corridor halfway between a commuter corridor and halfway between a regional intercity corridor. As a result, to capture optimal ridership it needs to serve both its two intercity corridors NYC to Albany and Albany to Buffalo locally between the paired markets within each corridors limits while serving the regional corridor market pairs – or the Buffalo, Rochester, Syracuse to NYC pairs. These service needs exist in near mutual exclusivity on the same corridor and require different considerations to make each type of service successful. In terms of congestion on the corridor, it is clear that the improvements in rail are taking advantage of air congestion while losing to the lack of auto-congestion on Thruway. In terms of transit connections-the ability to capture the heavily distributed and suburbanized populations surrounding station areas would optimize the rail corridor's improvement program and create additional economic impact opportunities at both receiving and sending transit zones. This would require extension of county and regional transit system to support inter-regional linkages to transit facilities or require the development of a dedicated corridor bus system – similar to that operated by New Jersey Transit to support the rail network. Further, in terms of the business of modeling and forecasting rail ridership – a plan for such linkages would effectuate the capture of this market by widening the competitive influence of the station zone.

9.3 Tale of Three Corridors: Rationalizing and Positioning the Corridor with a Dual Approach

Given the forecast results and the above analysis – to ask what the Empire Corridor should be or could be – it is necessary to see what it is through how it functions in light of the modes that serve its sub-corridors and major market areas. Rationalizing the corridor in terms of transportation market position is a study of evaluating a form of applied geometry between nodes – the method of traversing this geometry is a behavioral choice subject to three influence variables - duration, frequency, and cost. Although there exist a “halo” of other influences – mentioned later in this section – these variables form a “decision calculus” that govern how a market performs under the constraints of various modes operating within

the market geometry. For the purpose of this analysis – there are really three corridors within the Empire Corridor – each of these corridors has specific geometries and applied influences that will determine what mode will be most successful based on their characteristics

9.3.1 NYC to Albany

This 150 mile corridor is served by rail, bus, air, and auto service. Most of the trips on the inside the corridor are either to NYC or to Albany rather than connections to the small cities and towns within the corridor. The length of this trip is best served by the more efficient mode of travel – in this case, auto, rail, and bus – the trip length is simply too short for air travel with its complex access and egress components to be successful here. The corridor is already 110 mph enabled but is subject to limitations in geometry, control by the Metro North Railroad on the southern tier and CSX on its northern tier, and by train storage at Penn Station limiting the number of departures. As noted in the body of this report – all alternatives performed in the study result in only limited enhancements in travel time between Albany and NYC and therefore growth in ridership within this sub-corridor is limited. However there is a travel market of at least 2.8 million roundtrips of which rail captures slightly above 10 percent. For rail to capture greater market share in service of this market from dominant auto mode or the highly competitive bus market that has twice the number of existing patrons compared to rail – it must either increase speed, reduce the number of stops along the corridor, add service, or offer a host of other compelling factors referred to as “halo” influences which were not investigated in detail for this report. Service enhancements are currently constrained by storage limitation (the parameters of this study did not offer a sensitivity test for level of service – and there are limited differences in schedule considered for this portion of the corridor), and rail travel cost is competitive to both auto and bus and lowering cost of rail was shown in this study to be highly inelastic in terms of shifting demand from auto. The key is simply to get from major boardings market to major boardings market as fast as possible to be more competitive against auto and bus. The existing conditions section showed that total travel time from origin to destination for auto is 167 minutes while rail is 190 minutes (includes wait, access/egress, and allowance for OTP). The simplest way to do this and achieve modest speed gains is to provide express or limited express service. Removing four stops could save approximately 15 to 20 minutes. It is uncertain as to whether this will have the desired effect – as express service introduces a trade off with a loss off ridership at other stations. Further, it is uncertain as to whether a 10 to 15 percent reduction in travel time would “flip the switch” from bus and auto riders and result in increased ridership. It is worth exploring this dynamic further as the potential market is large, and the reductions in travel time required being more competitive are modest compared to the rest of the corridor.

Additional factors that could improve this sub-corridors ridership are transit linkages to metro-Albany’s expansive suburban region, localized station area employment or population growth or some form of development of regional significance. Others efforts such as marketing the corridor, direct selling tickets and offering various travel packages may enhance ridership as well. External factors such as enduring rising fossil fuel costs – such as are currently being experienced may also have a significant impact on ridership increases.

9.3.2 Albany MPO to Buffalo MPO

This 300 mile sub-corridor seemingly should have the greatest rail market potential – with several medium sized cities, distances between stations better spaced, and with a very large travel market dominated by auto travel it is well positioned to compete against other modes. The same elements however are present here as in the NYC to Albany MPO Corridor. Although the improvements to level of service, travel time, and reliability are extensive and are the engine for the overall corridors large gains in ridership – the market is so large – about 20 million trips intra-corridor that there should be more that can be done to capture travel market share. Although the gains in ridership forecast are significant – from only 80,000 of 1.2 million rides on the Empire Corridor in 2009 to 280,000 rides forecast for the 110 mph 2035 or over a 300 percent gain in ridership, it is only 1.4 percent of the potential market. The key in this lack of mode share capture is the basic geometry of the corridor, space between stops and the presence of an uncongested Thruway that provides quick auto trips between the city pairs on this sub-corridor and quickly connects auto users from the origin to their destination – whether it be to center-cities or to the heavily dispersed populations that make up each major market on the corridor. While distances between city pairs may average between 60 to 80 miles apart – each market comprises about 30 miles in radius around the station area or a third to a quarter of the direct station to station distance. Given this situation, the solution is similar to the NYC MPO to Albany MPO approach. The farther each city pair is apart – the greater ability of rail to compete against auto and bus. Therefore, express service focusing on the major markets, namely, Albany to Buffalo with stops perhaps at both Syracuse and Rochester or alternatively between them. The ridership results revealed that there was not a significant increase in ridership between the 2018 and 2035 for the 79 mph, 90 mph, and 110 mph alternatives on this sub-corridor. The differences between 2018 and 2035 schedules – from 7 round trips to 12 indicates that an increase in frequency of service has a declining rate of return and that perhaps express service could replace some of these round-trips with stops at eight stations between the Albany and Buffalo MPO's. Removing up to five cities for express or limited express could save an additional 25 minutes – however those gains may result in an offsetting loss of ridership due to the bypass of other stations. This relationship should be further studied as should additional enhancements to the corridor to further increase speed. Significant additional reductions in travel time would likely result in a much greater percentage of auto-trips being captured – however for the shorter pair trips – further reductions travel time would need to be very large perhaps an additional 30 or 40 percent. Alternatively, it is possible that more frequent service – headways of 30 minutes or less between shorter pairs may result in additional ridership – such as Rochester to Buffalo Exchange or Syracuse to Rochester. Such considerations may warrant further evaluation.

Finally, additional factors, as noted above in the NYC MPO to Albany MPO section such as strong land use policies for station surroundings backed by economic incentives, with facility improvements to maximize security and sense of place supported by new intra-regional transit connections to link stations to the suburban areas easily accessed by automobile would likely enhance ridership significantly.

9.3.3 NYC to Buffalo

NYC to Buffalo is a representation for long trips ranging the entire corridor. Trips this length have greater similarity to emerging HSR –and could be designed to take advantage of the benchmark keys to HSR – namely strong dominance against the air market.

The forecast results show that the longer the trip on the corridor, the greater the impact of the alternatives studied on travel time reductions, resulting in greater increases in ridership. Long Trips on the Empire Corridor – or trips that connect pairs such as NYC to Buffalo, NYC to Rochester, and NYC to Syracuse – account for about 60 percent of all growth forecast in all of the build alternative speeds studied. These pairs capture about 20 percent of the air market and 5 percent of the -bus market on the corridor. Auto is a small amount of the total trips between NYC and the major markets on the western portion of the corridor. Trips from one end of the corridor to the other, although different from the two constituent corridors discussed above which are composed of considerable intra-corridor travel captures its market less on frequency of service but more on trip time. Combining the two express or limited express approaches with a total of approximately four or five stops from NYC to Buffalo could eliminate the in station wait time and acceleration and deceleration time loss from stops at 10 stations and cut 50 minutes in travel time from the trip from NYC to Buffalo – almost equal to the time savings for the 110 mph option. This would likely have a dramatic effect on ridership and capture an additional significant portion of air and bus travel.

9.3.4 Combining Service Planning Approach with a Whole Market Approach

The rail service approach suggested above is fairly straightforward - add express service to the corridor and dovetail such service with a large “local” service to maintain the smaller markets and add mobility options for the entire corridor. This approach combined with a “whole market” approach – that perceives successful rail service being considered in step with the points which it connects and the market from which it draws. This means while enhancing rail service, concurrent enhancements to land use policy to support rail service must be implemented concurrently with the enhancement of transit linkages to bring a market to rail – particularly in this market dominated by old manufacturing cities with declining urban cores and growing suburban low density sprawl. The long term goal is to bring people and jobs closer to transit connections – by investing and incentivizing investment in development proximate to stations. Along with rail – The Empire Corridor development program would conceptually include four plans – an operating plan, a transit plan, a land use plan, and a policy plan to incentivize integrated planning and development.

9.4 Further Considerations

This section briefly details additional considerations that can or should be made to support this Study’s findings, the Tier 1 EIS and future Tier 2 EIS as well as the entire NYSHSIPR Program.

Additional Operational Considerations for Evaluation

A maximum average speed should be modeled to clearly establish a trend relationship between speed and ridership growth.

Schedule alterations should be considered to provide for express service or limited express service for

- NYC to Albany with stops at Hudson or Rhinecliff
- Albany to Buffalo with stops at Syracuse and/or Rochester
- NYC to Buffalo with stops at Hudson or Rhinecliff , Albany, Syracuse and/or Rochester
-

Additional Markets for Consideration

Toronto and Quebec should be considered as additions to the corridor with the determination of the impact it would have on corridor ridership – either as a model input or a more informal evaluation. It is possible that the addition of Toronto will transform the Western portion of the corridor and breed significant additional leisure travel between NYC and Toronto market. Clearly such a study would have to consider additional speed to make an impact.

Census – Population / Job Growth Update

The availability of the 2010 census data and questions about growth rates used at certain locations in the corridor based on commercial projections – it may be worthwhile to evaluate a population and job growth sensitivity test that evaluates the impact of a broader range of low medium and high growth scenarios for each of the major markets. The new census would certainly aid in clarifying the socio-economic profile for the market study.

Economic Impacts

In order to capture a full picture of both ridership growth and economic benefits beyond fare box recovery and to put capital and O/M cost investments in perspective for those who will ultimately make decisions regarding investment in the Empire Corridor – an economic impacts study defining primary and secondary economic impacts stemming from enhanced rail service is strongly suggested. Often public investment in transit is not given a fair evaluation in terms of return on public investment – often the results are quite surprising and can greatly facilitate the development of support for a project.

Cost Benefit Analysis

A cost to benefit style assessment should be performed in order to define which alternative studied achieves the goal of gaining the most riders at the best Operating and Maintenance (O/M) per rider mile cost and to define the initial and annualized operating cost by alternative. This would allow for a finding of revenue and potentially secondary benefits versus both fixed annual O/M costs and annualized capital program for all alternative studied.

Land Use, Transportation & Corridor Economic Incentives Plan

A combined land use, transit and economic policy plan would help frame the rail program in the context of a master plan vision for the corridor – ultimately enhancing economic impact and significantly bolstering forecasted ridership. Currently such a feedback loop into the model is absent – essentially leaving out induced demand from economic impact to the markets served.

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10.0 Appendices

10.1 APPENDIX A: Modeling Methodology



New York Empire Corridor Intercity Travel Demand Model

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About this Document

In 2010 HNTB contracted with Citilabs to provide assistance in developing a model capable of forecasting intercity travel by car, bus, rail, and air within the Empire Amtrak corridor, for purposes of forecasting rail ridership under improved high-speed service. Since most of the State of New York's population lives within the Empire corridor, the tool that can perform this task is an intercity multimodal travel demand forecasting model that is statewide (or nearly so) in scope. This document describes the model, as developed by Citilabs for use by HNTB in forecasting rail ridership for the Empire Corridor study.

Topics include:

- **Literature Review**
- **Model Design and Specification**
- **Data Development and Implementation**
- **Model Calibration and Validation**

Literature Review

Soon after being asked by HNTB to develop the Empire Corridor intercity travel demand forecasting model, Citilabs performed a review of the literature describing existing current practices in statewide and intercity travel demand modeling. The findings of this review are summarized in this section.

Typology of Intercity Travel Models

The *Guidebook on Statewide Travel Forecasting* (Center for Urban Transportation Studies, University of Wisconsin – Milwaukee, 1999) provides an overview of multiple approaches used around the United States for projecting traffic in areas outside of major metropolitan areas, including time series analysis, four-step statewide models, and specialized statewide models. Especially useful is an Appendix to this report describing “The State of the Art in Statewide Travel Demand Forecasting”, which includes a section dedicated specifically to intercity passenger models. The report identifies four types of intercity passenger models based upon whether the input data are aggregate or disaggregate and whether demand is calculated in a single step or a set of sequentially applied steps. Thus, the major types of intercity passenger models are:

- Aggregate direct-demand models
- Aggregate sequential models
- Disaggregate direct-demand models
- Disaggregate sequential models

In general direct-demand models preceded sequential models in the development of the field. In particular the first such model was used to project demand in the Northeast Corridor in the 1960s. Almost all direct-demand models are aggregate; only one has been reported using disaggregate data (household travel market stratification by income).

Sequential models developed alongside advances in urban travel forecasting during the 1970s and 1980s, especially in the application of multinomial logit modeling to discrete choice analysis problems, such as mode split. Although such models can be developed from aggregate data, more typically they are estimated using disaggregate household travel survey records. Sequential models may then be applied either through simulation of individual choices or evaluation across several defined travel market segments.

The 1977 New York Intercity Rail Ridership Forecasting Model

Previous forecasts of rail patronage in the New York City to Buffalo corridor were prepared in 1977 using aggregate sequential methods (Cohen, Erlbaum, & Hartgen, 1977). Despite the relative age of this model, it bears further discussion here because of the strong similarity in location, scope and purpose to the current effort.

Preliminary research reports provided by New York State DOT staff who worked on the original Buffalo-NYC rail ridership forecasting effort indicate that the 1977 model was calibrated using a database of intercity travel by mode collected in 1975 (Erlbaum, Trentacoste, Knighton, & Slavick, 1977); similar data had been collected previously, in 1973 (Albertin, 1973). The model structure was informed by a review of the state of the art in forecasting practices conducted between 1973 and 1977 (Hartgen & Cohen, 1976), which at the time included direct demand and time series models as well as what are now termed sequential models (“post-distribution” at the time), including multinomial logit share models. However, the report noted some challenges associated with the logit-based approach:

- Share models suffer from the Independence of Irrelevant Alternatives (IIA) axiom, stating that any new traffic attracted to an alternative will be drawn from the others in proportion to their original shares [if the other alternatives’ attributes do not change];
- At the time, such models were considered difficult to calibrate, requiring specialized computer programs and mathematical expertise;
- They require detailed data on all “modal volumes and their attributes”;
- The disaggregate data normally used for their calibration in the urban context was generally not available for intercity travel.

The NYS DOT researchers in 1977 also identified a “hybrid” structural category which could potentially overcome some of the problems with both direct demand and sequential logit models by combining the best aspects of the two approaches. The hybrid aspects described include various techniques used to control the outputs to match observed totals or constrain a sequential model to match the equivalent direct demand result. In particular the “pivot-point” analysis technique uses the forecast model to predict the percent change in travel variables, rather than absolute quantities thereof.

The model used to predict rail ridership for the Buffalo-NYC corridor in 1977 belonged to this “hybrid” category. Total person-travel between city pairs (including nearby cities outside the state, such as Boston and Washington) was forecast using a gravity-type model based on socio-economic factors. To estimate mode shift to rail, a series of binary logit “rail competition” models were applied for each non-rail mode, pivoting off of existing mode shares for the origin-destination pairs.

Although it apparently did not survive the transition to computerized modeling with GIS-based networks that has occurred in the decades since then, the 1977 Buffalo-NYC rail ridership forecasting model is interesting from the perspective of a historical window on the evolution of statewide and intercity travel forecasting efforts, and also as an example of how another modeling team addressed challenges involved in forecasting intercity multi-modal travel in this corridor, some of which are still relevant today. The use of a series of binary logit diversion models rather than multinomial logit was adopted in later high-speed rail forecasting models (including as recently as 2000 by Charles River Associates).

Recent Statewide Passenger Travel Models

Returning to the *Guidebook*, in 1999 all of the states that reported having statewide passenger travel models relied upon a “four-step” sequential process using fairly standard UTP procedures. These included ten states: Connecticut, Florida, Indiana, Kentucky, Michigan, New Hampshire, New Jersey, Vermont, Wisconsin, and Wyoming. Of these, however, only four states (Connecticut, Indiana, New Hampshire, and Wisconsin) forecasted non-auto modes of passenger travel, generally using multinomial logit-type models.

Six years later, a “peer exchange” (Transportation Research Board Statewide Multimodal Transportation Planning Committee, 2005) was held at which practitioners shared their perspectives on statewide modeling and reported on recent experiences. Several new statewide models were also reported, including Louisiana, Massachusetts, Missouri, Ohio, and Oregon. The last two cases are particularly noteworthy because they involved the fully disaggregate micro-simulation models of travel behavior, of the so-called “activity-based” or “tour-based” type. In both cases the model design and specification also included integrated economic land use modeling components. Neither of these advanced models were fully completed at the time of writing, and in both cases difficulties were reported relating to their immense data and computational requirements.

The findings of the guidebook as well as the peer exchange were incorporated into the report *Statewide Travel Forecasting Models: A Synthesis of Highway Practice*, published the following year (Horowitz, 2006). Responses to a survey of states engaged in model development (begun in 1999 with the *Guidebook*) were reported. Some common themes in the responses were:

- The most common intended uses for statewide models were to support corridor or system planning, including Environmental Impact Statements (EIS) and project-level traffic forecasts, although many models were also used to either assist or substitute for an MPO model.



- The most common measures of effectiveness were Vehicle-Miles of Travel (VMT) and Vehicle-Hours of Travel (VHT), suggesting most models were intended primarily for forecasting automobile traffic.
- Employment data were gathered from the Census Transportation Planning Package (CTPP), MPO data, and commercial vendors.
- Economic forecasts were derived from state agencies, and regional economic models, but in some cases also commercial forecast vendors.
- Data used to calibrate the passenger component included CTPP, Census Journey-to-Work data, NCHRP Report 365, National Household Travel Survey (NHTS), MPO household survey, and the American Travel Survey (ATS).
- Highway traffic data was obtained from own agency counts as well as the Highway Performance Monitoring System (HPMS).
- Networks were primarily developed from the agency's own road inventories, but also National Highway Planning Network (NHPN) and MPO networks, as well as products provided by commercial vendors.
- All models included passenger automobile traffic among the modes forecasted, and many models included conventional intercity bus and rail, while only a few considered passenger air travel or a separate high-speed rail mode.
- Very few models supported peak period or peak hour (time-of-day) analyses; most forecasted traffic for a 24-hour "typical" day (e.g. average annual day).
- Most models used either MPO zones, aggregations thereof, or Census geographies.
- Trip purposes included home-based work (HBW), home-based other (HBO), non-home based (NHB), long-distance recreation, and long-distance commute/business/other.
- Automobile occupancy rates were used to convert from person-trips to vehicle-trips.
- Gravity models without composite impedance were typically used for trip distribution.
- In multimodal models, mode split was often calculated using a logit expression.
- An increasing number of freight models were based upon commodity flow forecasting, in contrast to traditional truck-only models.
- Several models used origin-destination matrix estimation from traffic counts as either a core, interim, or background component of the model calibration. One of the suggestions for further research generated by the report included innovative methods of estimating origin-destination tables from ground counts.

The California Statewide High-Speed Rail Study Model

Since 2006, statewide modeling efforts have continued the lines of development described above, alongside a new focus on applications to forecasting for specific systems. In particular, the California High-Speed Rail model is of special interest here because the Empire line is a potential HSR corridor, thus the modeling needs are similar.

A version of the California statewide model, generated through software training workshops, existed at the time of the NCHRP synthesis report in 2006. Additional model development work was conducted by a team led by Cambridge Systematics with the specific goal of forecasting rail ridership for a new high-speed statewide network. This version of the model was reported in a paper published in the *Journal of Choice Modelling* (Outwater, Tierney, Bradley, Sall, Kuppam, & Modugula, 2009). More recently, a research project led by the University of California, Davis is attempting to develop a new fully disaggregate simulation-based integrated land use and travel demand forecasting model for California, but this effort was still far from being used for any project-level forecasting as of the writing of this report.

Perhaps the most important innovation introduced by Cambridge Systematics et. al. in their version of California's statewide model is the adoption of a consistent hierarchical nested choice model structure for all model components, instead of the separate gravity-type trip distribution and logit mode split models that had previously dominated statewide modeling methodology. In this approach, the so-called "logsum" composite impedance is extracted from the mode choice model and provided to the trip distribution model, which is evaluated as a behavioral choice among all of the possible destinations available from a given origin. Furthermore, non-auto modes (air, conventional rail, and high-speed rail) are nested within the mode choice model, with composite impedances extracted from the non-auto mode level of the nest and provided to the auto/non-auto choice level. As a result the developers of the California statewide model for high-speed rail forecasting were able to use multinomial logit forms throughout all sub-models without introducing IIA-related issues. It may be noted that the California statewide model system was implemented entirely in Cube, and took advantage of recent software advances making such logit models easier to develop and use.

However, there are several concerns which make it problematic to simply transfer the California statewide high-speed rail forecasting model approach to New York for the present study:

- The model contains many parameters, some of which were either not reported in the 2009 paper or were adjusted between model calibration and application;

- Like most discrete choice travel behavior models, the statewide model was estimated using locally-generated disaggregate travel survey data, and thus it would be difficult to replicate their work in states where similar data are not available (e.g. New York);
- Local MPO travel demand models are used to forecast intraregional travel, and thus the approach requires access to these models as well as completion of the non-trivial task of replicating them within a common model system; and
- In general, the estimation, calibration, and validation of a model based upon this approach involves tasks whose scope vastly exceeds the resources of the Empire Corridor study.

Therefore, the California model structure could not simply be “transferred” to New York. However, the study nonetheless aptly demonstrates that it is possible to forecast high-speed rail ridership on a statewide scale using the hierarchical multinomial logit form.

Incremental Logit Models

One of the powerful features of multinomial logit models is that they can be applied in an incremental or pivot-point form (Ben-Akiva & Lerman, 1985). This technique requires only information regarding base choice shares and information regarding the change in utilities for each alternative. If implemented in this manner, alternative-specific constants are omitted, and therefore need not be calibrated using local data, since the base choice shares provide equivalent information. Furthermore, by expressing the utilities as scaled generalized costs (usually accomplished by dividing the utility expression by the coefficient of in-vehicle travel time), it is possible to assert most of the required parameters by examining ranges from other studies, rather than having to estimate models using local data.

Incremental logit is similar in concept to the “pivot-point” modeling techniques that were used in the 1977 Buffalo-NYC ridership study. Incremental logit models have been successfully used to forecast intercity high-speed rail ridership, e.g. in a nationwide feasibility study conducted for Thailand (Stopher, Metcalf, Wilmot, Catalina, & Schimpeler, 1999). That study offers a complementary incremental approach to trip generation, implemented by factoring total base year observed person trips between city pairs according to growth in population, employment, or other indicators of economic activity, obviating the need for development of local top-down trip generation models.

Based upon this review, it appears that hierarchical multinomial logit is in fact an appropriate, proven form for intercity multimodal passenger demand models. Furthermore, many of the challenges associated with developing such models can be reduced or eliminated by expressing the functions to be used in a cost-based, incremental form.

Model Design and Specification

This section describes the basic structure of the Empire Corridor intercity travel demand model. The purpose of the model is to forecast zone-to-zone person-trips by mode (auto, air, bus, and rail). Furthermore, a design goal of the model is to minimize the number of parameters requiring calibration, instead making maximum use of the observed trip movement data (since no conventional household or personal survey data were made available for this study, as explained further in the next section). Finally, the model structure is intended to be scalable, so that the initial corridor model needed for rail ridership forecasting can be expanded in scope and detail to eventually become a statewide intercity travel demand model.

A “pivot” model structure previously developed for training purposes was adapted by Citilabs to meet the needs of this project while taking into consideration the other constraints and goals identified above. The pivot model includes four steps as in a conventional UTPS-style model—trip generation, distribution, mode split, and assignment—yet each of these steps is formulated incrementally. In other words:

- The skims extracted using network path-building and assignment routines are used to calculate change in zone-to-zone generalized costs, rather than absolute generalized cost.
- Mode split is performed using an incremental hierarchical multinomial logit model, given base trips by mode and changes in cost.
- Trip distribution is expressed in terms of shift in destination choices, calculated using incremental multinomial logit based on change in composite costs extracted from the mode choice model.
- Trip generation is expressed in terms of change (growth or decline) in trip ends. Induced demand effects could be captured by considering destination choice logsum accessibility terms in calculating the change in trips.

In relation to the models surveyed in the previous section, this structure is similar to that reported in the Thailand high-speed rail feasibility study, while incorporating aspects of the California HSR model and prior New York models. Note that, in addition to being formulated incrementally, the process described above reverses the conventional order of the four steps in the UTPS model, in order to pass information between the steps in an integrated manner.

The mode split and trip distribution steps are incremental multinomial logit models connected using composite impedance terms. Together these combined models forecast

the counterfactual number of person-trips that would travel between each zone pair by mode if generalized travel costs changed, without altering the magnitude of trip ends:

$T_{ijk} = O_i * \Pr(D_{ji}) * \Pr(M_{kij})$, where:

T_{ijk} = the number of trips between zones i and j by mode k

O_i = the base total person-trip ends originating from zone i

$\Pr(D_{ji}) = \text{Sh}(D_{ji}) * \exp(-\lambda_d \Delta C_{ij}) / \sum_j \text{Sh}(D_{ji}) * \exp(-\lambda_d \Delta C_{ij})$ = the conditional probability of choosing destination j given that a trip originates at zone i , where:

$\text{Sh}(D_{ji})$ = the share of trips originating from i that choose destination j in the base scenario

λ_d = a "scale" parameter representing sensitivity of destination choice to composite cost

$\Delta C_{ij} = (1 / \lambda_m) * \log(\sum_k \text{Sh}(M_{kij}) * \exp(-\lambda_m \Delta GC_{kij}))$ = change in composite cost, where:

λ_m = a "scale" parameter representing sensitivity of mode choice to composite cost

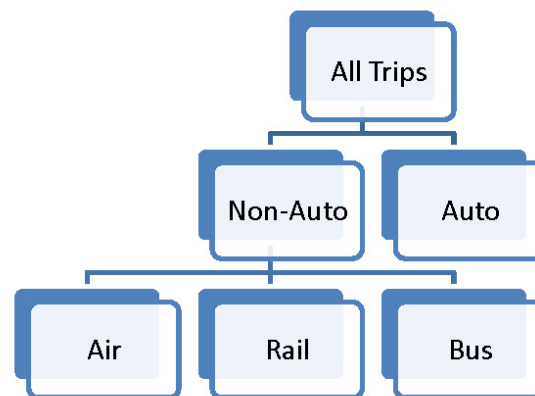
$\text{Sh}(M_{kij})$ = the share of trips from i to j that choose mode k in the base scenario

ΔGC_{kij} = the change in generalized travel cost from i to j by mode k from the base scenario

The composite cost is the so-called "logsum" term of an incremental multinomial logit mode choice model:

$\Pr(M_{kij}) = \text{Sh}(M_{kij}) * \exp(-\lambda_m \Delta GC_{kij}) / \sum_k \text{Sh}(M_{kij}) * \exp(-\lambda_m \Delta GC_{kij})$

In practice, the unobserved characteristics of non-auto modes are correlated, creating unique competition patterns between the highway mode and other modes. This is reflected in the mode choice model by introducing a non-automotive nest, resulting in the mode hierarchy shown below:



The model requires a highway network plus a set of multimodal public transit lines representing non-auto modes of travel. Zone-to-zone highway generalized costs are extracted by using the Cube Voyager HIGHWAY program to construct minimum-time network paths from origin to destination and tracing (or “skimming”) the time, distance, and toll cost associated with each origin-destination pair. Time, distance and toll costs are combined into generalized cost in time units (minutes) for highway modes using the following expression:

$$GC_{carij} = \text{time}_{ij} + \text{distance}_{ij} * (\text{VOC} / \text{VOT}) + \text{toll}_{ij} / \text{VOT}, \text{ where}$$

VOC = the average Vehicle Operating Cost, in \$/mile, and

VOT = the Value of Time, in \$/minute, computed as a weighted average of business and non-business travel values of time, assuming a flat percentage of business travel.

Zone-to-zone public transit generalized costs are extracted by using the Cube Voyager PUBLIC TRANSPORT program to construct minimum-time network paths from origin to destination and tracing (or “skimming”) the in-vehicle time, out-of-vehicle time, and fare cost associated with each origin-destination pair. Time and fares are combined into generalized cost for public transit modes in time units using the following expression:

$$GC_{ptij} = IVTT_{ij} + 2 * OVTT_{ij} + \text{fare}_{ij} / \text{VOT}, \text{ where}$$

IVTT_{ij} = travel time spent inside a public transit vehicle, and

OVTT_{ij} = the travel time spent outside a public transit vehicle, e.g. traveling to a station or waiting for the next train to arrive.

The weighting factor of two times the in-vehicle travel time applied to out-of-vehicle travel time is borrowed from FTA guidance based upon synthesis results of a large number of fixed-guideway rail studies performed in the United States.

Note that the generalized cost definition applied in this study may be used either with single best-path (all-or-nothing) network skims or the multi-path capabilities provided by Cube Voyager. Multi-path methods allow the user to analyze competition between sub-modes using route choice models; for example toll versus non-toll travel, or conventional versus high-speed rail (if both forms of service are present). If multi-path methods are used, then the generalized costs noted above are actually based upon the “logsum” of a route choice model, embedded in either the highway or public transport assignment processes. In the scenarios analyzed for the Empire Corridor Study, it was not necessary to use multi-path methods, because the proposed service is a wholesale upgrade of the existing service, without any opportunity for competition between high-speed and conventional rail.

Note that, in either the single-best path or multi-path formulation, the zone-to-zone costs or skims for the auto as well as non-auto modes must take into account the level of congestion on the highway network. This requires consideration of local travel, which is not forecasted by the incremental model described above. For the Empire Corridor study, highway network congestion was estimated by calibrating a statewide vehicle-trip matrix from HPMS counts using maximum likelihood origin-destination matrix estimation techniques, and then assigning this matrix to the highway network using an iterative user equilibrium algorithm. For future years, the vehicle-trip matrix is factored to reflect growth in total vehicle-trip ends, based upon changes in socio-economic zonal variables. The vehicle traffic growth factor is computed as the ratio of future to base population plus two times employment in each zone, a widely used heuristic when more detailed trip generation parameters are not known. These growth factors are then used to compute row and column matrix margin targets for an iterative proportional fitting algorithm implemented using the Cube Voyager FRATAR module to develop a future year vehicle-trip matrix.

Similarly, growth factors are computed for intercity person-trips as well, based upon the change in socio-economic zonal variables. However, in this growth factor calculation, employment is weighted based upon the assumed percentage of business travel. These growth factors are applied to the forecast person-trip table created after applying the destination shifts indicated by the incremental logit model described previously, using the iterative proportional fitting algorithm implemented in the FRATAR module. Then, the shifted mode share percentages calculated using the hierarchical logit mode choice model are finally applied to derive future year intercity travel by mode.

The “pivot” model described above has only a handful of calibrated parameters, most of which are directly transferrable from other studies surveyed in the literature review or may be asserted based upon common knowledge in the field. It is also scalable, working essentially the same way regardless of zone system or network size, and accommodating expansion of detail in future revisions. The counterpoint to this simplicity and scalability is that the model is heavily dependent upon the input base travel matrices—if no travel is observed between two zones by a certain mode in the base scenario, none will be predicted in the future scenario. Thus, although appropriate for analysis of the proposed upgrades to the existing Empire Corridor, the pivot model structure would be inappropriate for analysis of a new location rail corridor or extension of rail service into a presently un-served area. Furthermore, in practice, it is impossible to observe trips by mode from their “true” origin to their “true” destination; rather the data provided by HNTB in this study included observed ridership from station to station and similar part-trip data for other modes (i.e. interchange to interchange, airport to airport, terminal to terminal). Thus most of the effort involved in calibrating the pivot model was dedicated to estimating the true origin and destination zone for these observed partial trips.

Data Development and Implementation

Unlike many of the statewide intercity multimodal travel forecasting projects mentioned in the literature review, the Empire Corridor study did not include scope for new data collection. Thus the modeling approach for this study was tailored to make maximum use of available databases. To help quantify the existing shares of travel by these modes in the corridor, HNTB staff provided the following data to Citilabs:

- Annual 2009 Amtrak boardings and alightings by station
- Annual 2009 Thruway trips by interchange pair
- Annual 2009 air travel (passengers) between major NY airports
- Bus trips between major NY cities in 2009

A variety of ESRI GIS format data were also compiled from public sources, including:

- National Highway Planning Network (NHPN) roadway centerline shapefiles, with attributes describing the functional classification, number of lanes, and Annual Average Daily Traffic (AADT) of major roadways included in the Highway Performance Monitoring System (HPMS)
- Locations of interchanges and toll plazas on the New York State Thruway
- Polyline data representing the Amtrak rail network and point data representing actively used and proposed station locations
- Polyline data representing intercity bus routes and point data representing the current bus station locations
- Point data representing the locations of major airports in New York City, Albany, Syracuse, Rochester, and Buffalo
- Census polygon area (e.g. county, subdivision, tract, block) boundaries
- New York area transit information imported from Google Transit Feed format

In addition, socio-economic data were compiled from the following sources:

- Block-level demographics from the decennial U.S. Census 2000 files
- Block-level employment estimates at places of work from the Longitudinal Employer-Household Dynamics "OnTheMap" synthetic micro-data

- Independent county-level socio-economic projections through 2035 purchased from Woods and Poole, a commercial vendor.

The possibility of using National Household Travel Survey (NHTS) 2001 or 2009 data to directly estimate parameters for trip generation, distribution, and mode split models was investigated and ultimately abandoned due to NYS DOT staff concerns about the data's quality and suitability for the intended purpose (source: personal communication with Nathan Erlbaum). Furthermore, although Citilabs' activity-based demonstration model script could in theory have been transferred to the local context, this was agreed to require effort beyond the scope of the rail ridership forecasting project. Therefore, to make the maximum use of the available data while requiring minimal estimation and calibration of new model parameters, Citilabs recommended an incremental or "pivot modeling" approach based upon insights from the literature review, described as follows:

- A base "background travel" vehicle-trip matrix was directly estimated using Cube Analyst from observed AADT reported in the NHPN network based upon HPMS databases, and a capacity-constrained iterative assignment was performed to estimate congested base generalized travel costs between TAZs throughout the state.
- The base travel information by mode (auto, bus, rail, air) collected by HNTB was disaggregated to the TAZ system, which is based directly upon Census geography, using County subdivisions as the target scale for intercity travel analysis.
- To develop future year no-build forecasts, the networks remain the same, and:
 - Growth in total trip productions and attractions is assessed using a FRATAR process incorporating socio-economic growth factors derived from Woods and Poole projections.
 - After factoring to reflect growth, the "background travel" matrix is assigned to estimate the level of increase in highway travel costs due to congestion.
 - Mode shift from auto to other modes is calculated based upon applying a nested multinomial logit model implemented using an incremental formulation. The nest separates auto from the other modes, providing a means of controlling the overall level of diversion and addressing the IIA concerns that initially precluded use of multinomial logit in the 1977 Buffalo-NYC rail ridership study. This nesting structure is also generally consistent with that used in the California statewide HSR forecasting model, as well as the Amtrak Northeast Corridor Model.

- Shifts in destination choice due to changing travel costs between zones may also be calculated by applying a multinomial logit model formulated incrementally, based upon changes in composite cost from mode split. The destination shift model may be turned off, if desired.
- Future year build forecasts are produced in the same manner, with the addition of rail networks coded based upon project assumptions, including service frequency and schedule information input by the HNTB team.

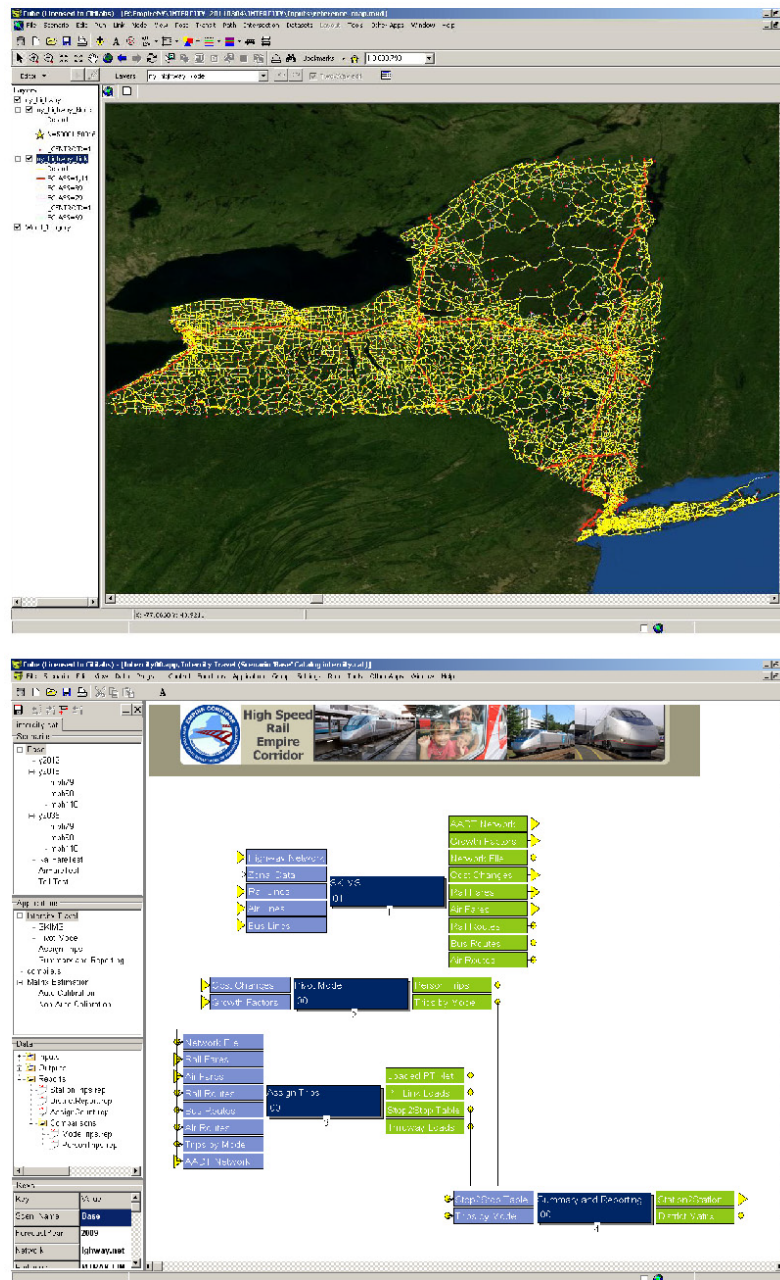
As noted previously, the incremental formulation described above works in this case because the high-speed rail projects under consideration all constituted improvements in existing corridors, rather than wholly new service, and because the PUBLIC TRANSPORT program enumerates and evaluates multiple routes having different levels and types of service. In the future it may be desirable to convert the pivot model to a more conventional “absolute” hierarchical logit structure.

An especially attractive aspect of the model structure described above is that the process can be scaled in geographic resolution as desired. In the case of this project, the basic programming logic was first implemented in a proof-of-concept model applied to a “test” network connecting the six major cities. Model calibration (to reported ridership trends) was then performed using a more realistic GIS-based network extracted from the NHPN centerlines and Census subdivision boundaries. This generated a model sufficiently detailed and sensitive to produce reliable draft rail ridership forecasts for the Empire Corridor; however the lack of detail afforded by the NHPN network did result in some aggregation biases affecting the intercity highway travel forecasts.

To improve the representation of highway travel in the Empire Corridor model, the team entered a third round of refinement using roadway centerline GIS data previously purchased from NAVTEQ by the State of New York. The NavStreets product is a high-quality source of roadway centerline information for travel demand model development, because it contains data on speeds, lanes, directionality of travel, turn prohibitions, and functional classification, in addition to true shape geometry for links and topology suitable for routing applications. HNTB obtained NAVTEQ NavStreets data from the New York Office of Cyber-Security via the NYS DOT GIS Coordinator. Citilabs staff then converted the roadway centerline files to Cube Voyager network format using a specialized import application previously developed as part of ongoing collaboration and partnership with NAVTEQ. After filtering out minor roads, centroids and connectors were added for a system of 1,040 zones corresponding to Census County subdivisions (effectively, cities and towns), via automated functions in Cube Base. Another automated Cube function was then used to consolidate links with the same attributes while maintaining topological consistency and linkages to the underlying NavStreets shapefile. The resulting network is shown on the next page as well as an image of the model application itself.



New York Empire Corridor Intercity Travel Demand Model

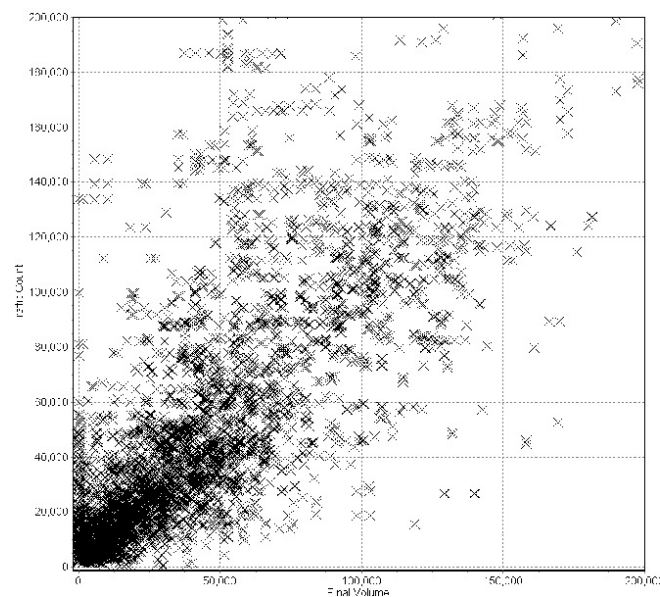


Model Calibration and Validation

This section provides background and summary information regarding the model calibration and validation work performed by Citilabs using the data provided by HNTB.

Statewide Average Daily and Corridor Annual Vehicle Traffic

As mentioned previously, the statewide average daily vehicle travel demand matrix was calibrated directly from HPMS counts in the 2009 NHPN network using Cube Analyst, a maximum likelihood origin-destination matrix estimation (ODME) program. Due to the large size of this problem, Cube Analyst was applied in an iterative manner, re-assigning the calibrated trip table after each iteration to extract new intercept and screenline data, using a different 10% random sample of all link counts on each iteration. Only Principal Arterials (i.e. freeways and tollways) were included in the sampling frame, given the focus of this study on long-distance, rather than local, travel. After three iterations of origin-destination matrix estimation, the total volume on all counted links was 306,417,184, or 90% of the total counted volume of 341,009,023, meeting typical guidelines for highway assignment model validation (Barton-Aschman Associates and Cambridge Systematics, Inc., 1997). Furthermore, a general pattern of linear correlation between assigned and observed volumes is observed in the final loading, as shown in the scatterplot below.



The New York State Thruway interchange-to-interchange annual toll transaction data used to represent base Empire Corridor highway mode travel demand were disaggregated to origin-destination zone pairs based upon a direct analysis of which zones in the average daily vehicle travel matrix used each interchange pair. The average daily traffic for the selected origin-destination zones was then factored to match the annual vehicle travel demand derived from the Thruway data sets while preserving the detailed trip distribution patterns revealed through the origin-destination matrix estimation process.

Intercity Bus Ridership

In general, good data on intercity bus travel within the Empire Corridor were not provided to Citilabs by the project team. Estimates of boarding and alighting passengers at major bus terminals were developed by HNTB based upon the inventories of the number of bus trips (vehicles) derived from operator-published schedules, combined with assumed loading factors based upon expert local knowledge. These were then coded into the model network as link passenger counts entering and leaving the station area via major bus routes. Cube Analyst was used yet again to estimate an origin-destination matrix of approximately 4.3 million intercity bus trips, derived directly from these “assumed” counts.

Commercial Air Travel

For the purposes of this study, corridor air travel demand was defined to include commercial passenger travel between the three major New York City airports (EWR, JFK and LGA) and four “upstate” airports (ALB, SYR, ROC, and BUF). Although data were also provided to Citilabs regarding annual passenger travel between the upstate airports, these trips were very small in number and ultimately determined to likely represent charter plane travel that would be non-competitive with high speed rail. Furthermore, although data were collected by HNTB regarding travel to and from the Toronto airport, it was not possible to include these trips within the definition of eligible corridor demand due to the limited geographic extent of the model. Thus the air mode travel matrix calibration process focused on developing a table of origin-destination trips yielding assignment outputs which compare favorably to observed travel between New York City and upstate airports. As shown in the following tables, this criterion was ultimately met within 1.2% error for all upstate destinations, within 0.9% for upstate origins, and within 0.1% overall.

Year 2009 Annual Air Travel (From NYC)					Year 2009 Annual Air Travel (To NYC)				
To Airport	Observed	Modeled	Error	Percent	From Airport	Observed	Modeled	Error	Percent
ALB	100,416	99,887	-529	-0.5%	ALB	100,753	99,882	-871	-0.9%
SYR	273,624	272,814	-810	-0.3%	SYR	272,116	272,609	493	0.2%
ROC	302,794	306,432	3638	1.2%	ROC	305,707	307,834	2127	0.7%
BUF	524,606	521,872	-2734	-0.5%	BUF	524,005	520,680	-3325	-0.6%
Total	1,201,440	1,201,005	-435	0.0%	Total	1,202,581	1,201,006	-1575	-0.1%

Empire Corridor Rail Ridership

Station-to-station boarding and alighting annual passenger counts for existing Amtrak service in the Empire corridor were disaggregated to origin-destination TAZ pairs based upon a two-stage process:

1. Access and egress links were developed from each zone centroid within an assumed 40-minute travel shed to the closest train station based upon shortest-time paths built using the final congested highway network loaded with the background average daily traffic developed as described in the previous section.
2. Annual passenger counts were allocated to origins and destinations associated with the starting or ending nodes of these access/egress links according to a probability of selection derived from a gravity-type expression taking into account station proximity (drive time) and total trip activity (as indicated by trip ends summarized from the average daily vehicle travel matrix).

This rail mode travel demand origin-destination matrix was assigned to the public transport network using Base year 2009 assumptions (i.e. no cost changes or service improvements). Observed and modeled ridership for this base condition are presented and compared in the four tables on the immediately following pages. For all station pairs except HUD-BFX, the assigned rail ridership matches the observed passenger count within one rider; and even at HUD-BFX the error is only 7 riders, or less than 10 percent of the passenger count. All total station boarding and alighting volumes are within 0.2 percent of the observed amount; and the total error for the entire station-to-station matrix is less than 0.01 percent as a whole. This validation report thus demonstrates that the calibrated base year rail ridership produced by the Empire Corridor model is accurate and precise relative to the available data, and that errors were not introduced during disaggregation of observed ridership from stations to transportation analysis zones for network assignment.

Conclusions and Future Directions

The Empire Corridor Intercity Travel Demand Model was successfully calibrated to match the observed travel data provided to Citilabs by HNTB. Validation with high accuracy was achieved thanks to automated techniques such as origin-destination matrix estimation and script-based disaggregation of stop-to-stop trips to zones. In general, however, the present model is highly dependent upon the quality of the input base data provided, because of its incremental formulation. Future efforts to develop a statewide travel demand model for New York State might benefit from a more conventional model estimation and calibration process using household or personal travel survey data.

New York Empire Corridor Intercity Travel Demand Model

Empire Corridor Existing Amtrak Service: Station-to-Station Annual 2009 Passenger Ridership, Observed																			
Row Labels	NYP	YNY	CRT	POU	RHI	HUD	ALB	AMS	SDY	UCA	ROM	SYR	ROC	BUF	BFX	NFL	SAR	Grand Total	
NYP	573	4,490	15,536	68,676	65,323	285,163	11,873	2,298	16,495	2,232	27,607	21,246	14,816	5,491	7,384	12,280	561,481		
YNY	573	8	34	225	541	3,915	286	51	312	58	592	704	384	185	145	263	8,273		
CRT	4,490	8	71	815	877	5,479	485	65	674	90	1,590	1,478	1,000	291	188	413	18,010		
POU	15,536	34	71	213	757	6,674	535	66	636	106	1,920	1,977	1,506	603	254	280	31,060		
RHI	68,676	225	815	213	135	1,097	68	7	108	28	367	522	279	119	63	101	72,820		
HUD	65,323	541	877	757	135	1,375	179	52	106	20	258	269	216	98	60	82	70,346		
ALB	285,163	3,915	5,479	6,674	1,097	1,375	221	47	1,310	180	5,355	6,106	6,380	1,406	789	223	325,717		
AMS	11,873	286	485	535	68	179	221	16	464	130	1,659	2,120	1,839	471	249	253	20,844		
SDY	2,298	51	65	66	7	52	47	16	42	11	238	363	365	101	42	0	3,761		
UCA	16,495	312	674	636	108	106	1,310	464	42	55	654	1,163	1,286	539	190	0	24,030		
ROM	2,232	58	90	106	28	20	180	130	11	55	167	260	287	118	63	0	3,801		
SYR	27,607	592	1,590	1,920	367	258	5,355	1,659	238	654	167	1,796	3,977	1,519	973	0	48,569		
ROC	21,246	704	1,478	1,977	522	269	6,106	2,120	363	1,163	260	1,796	928	515	421	0	39,865		
BUF	14,816	384	1,000	1,506	279	216	6,380	1,839	365	1,286	287	3,977	928	32	327	0	33,620		
BFX	5,491	185	291	603	119	85	1,406	471	101	539	118	1,519	515	32	36	0	11,508		
NFL	7,384	145	188	254	63	60	789	249	42	190	63	973	421	327	36	0	11,181		
SAR	12,280	263	413	280	101	82	223	253	0	0	0	0	0	0	0	0	13,895		
Grand Total	561,481	8,273	18,010	31,060	72,820	70,334	325,717	20,844	3,761	24,030	3,801	48,569	39,865	33,620	11,521	11,181	13,895	1,298,783	
Empire Corridor Existing Amtrak Service: Station-to-Station Annual 2009 Passenger Ridership, Modeled																			
Row Labels	NYP	YNY	CRT	POU	RHI	HUD	ALB	AMS	SDY	UCA	ROM	SYR	ROC	BUF	BFX	NFL	SAR	Grand Total	
NYP	573	4,490	15,535	68,675	65,322	285,163	11,873	2,298	16,494	2,232	27,607	21,246	14,816	5,491	7,383	12,280	561,480		
YNY	573	7	33	224	541	3,915	286	51	312	58	591	703	384	184	144	263	8,269		
CRT	4,490	7	70	814	877	5,478	484	64	673	90	1,589	1,478	1,000	291	187	413	18,006		
POU	15,535	33	70	213	757	6,674	535	66	635	106	1,919	1,977	1,505	602	254	280	31,060		
RHI	68,675	224	814	213	135	1,096	67	6	108	27	366	522	279	119	63	101	72,817		
HUD	65,322	541	877	757	135	1,375	179	51	105	19	256	268	216	91	60	82	70,334		
ALB	285,163	3,915	5,478	6,674	1,096	1,375	220	47	1,310	179	5,354	6,105	6,380	1,406	789	223	325,714		
AMS	11,873	286	484	535	67	179	220	15	463	129	1,659	2,119	1,838	471	249	253	20,843		
SDY	2,298	51	64	66	6	51	47	15	41	10	237	362	365	100	42	0	3,756		
UCA	16,494	312	673	635	108	105	1,310	463	41	54	653	1,162	1,285	538	190	0	24,023		
ROM	2,232	58	90	106	27	19	179	129	10	54	166	259	287	117	62	0	3,795		
SYR	27,607	591	1,589	1,919	366	256	5,354	1,659	237	653	166	1,794	3,976	1,518	972	0	48,558		
ROC	21,246	703	1,478	1,977	522	268	6,105	2,119	362	1,162	259	1,794	927	515	420	0	39,857		
BUF	14,816	384	1,000	1,505	279	216	6,380	1,838	365	1,285	287	3,976	927	32	326	0	33,615		
BFX	5,491	184	291	602	119	91	1,406	471	100	538	117	1,518	515	32	36	0	11,512		
NFL	7,383	144	187	254	63	60	789	249	42	190	62	972	420	326	36	0	11,178		
SAR	12,280	263	413	280	101	82	223	253	0	0	0	0	0	0	0	0	13,893		
Grand Total	561,480	8,269	18,006	31,060	72,817	70,334	325,714	20,843	3,756	24,022	3,795	48,558	39,857	33,615	11,512	11,178	13,893	1,298,708	

New York Empire Corridor Intercity Travel Demand Model

Empire Corridor Existing Amtrak Service: Station-to-Station Annual 2009 Passenger Ridership, Modeled-Observed (Error)																			
Row Labels	NYP	YNY	CRT	POU	RHI	HUD	ALB	AMS	SDY	UCA	ROM	SYR	ROC	BUF	BFX	NFL	SAR	Grand Total	
NYP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YNY	0	0	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	0	0	-4
CRT	0	0	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	0	0	-4
POU	0	0	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	0	0	-5
RHI	0	0	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	0	0	-3
HUD	0	0	0	0	0	0	0	0	0	-1	0	-1	-1	-1	0	0	0	0	-12
ALB	0	0	0	0	0	0	0	0	0	0	0	0	-1	-1	0	0	0	0	-3
AMS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1
SDY	0	0	0	0	0	0	-1	0	0	0	-1	0	-1	0	0	0	0	0	-5
UCA	0	0	0	0	0	-1	-1	0	-1	-1	0	-1	-1	-1	-1	0	0	0	-7
ROM	0	0	0	0	0	0	0	0	0	-1	-1	0	-1	-1	0	0	0	0	-6
SYR	0	-1	-1	-1	-1	-1	-1	0	-1	-1	-1	-1	0	-1	-1	0	-1	0	-11
ROC	0	0	0	0	0	-1	-1	-1	0	-1	-1	-1	0	0	-1	0	0	0	-7
BUF	0	0	0	0	0	0	0	0	0	-1	0	-1	-1	0	0	0	0	0	-5
BFX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
NFL	0	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	0	0	0	-2
SAR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-2
Grand Total	0	-4	-4	-4	-5	-3	2	-3	-1	-5	-7	-6	-11	-7	-5	-9	-2	-2	-74
Empire Corridor Existing Amtrak Service: Station-to-Station Annual 2009 Passenger Ridership, Percent Error																			
Row Labels	NYP	YNY	CRT	POU	RHI	HUD	ALB	AMS	SDY	UCA	ROM	SYR	ROC	BUF	BFX	NFL	SAR	Grand Total	
NYP	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
YNY	0.0%	0.0%	-2.7%	-1.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-0.5%	-0.1%	-0.4%	-0.1%	0.0%	-0.1%	-0.1%	-0.1%	-0.1%	0.0%
CRT	0.0%	0.0%	-0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-0.6%	-0.1%	-0.4%	-0.1%	0.0%	0.0%	-0.1%	-0.1%	-0.1%	0.0%
POU	0.0%	0.0%	-1.0%	-0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	-0.7%	0.0%	-0.4%	-0.1%	0.0%	0.0%	0.0%	0.0%	-0.2%	0.0%
RHI	0.0%	0.0%	0.0%	-0.1%	0.0%	-0.1%	0.0%	0.0%	0.0%	-3.1%	-0.2%	-1.1%	-0.2%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	0.0%
HUD	0.0%	0.0%	0.0%	0.0%	-0.1%	0.0%	0.0%	0.0%	0.0%	-1.0%	-0.6%	-2.1%	-0.4%	-0.2%	-0.2%	-0.3%	-0.6%	-0.6%	0.0%
ALB	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-0.8%	0.0%	-0.2%	0.0%	0.0%	0.0%	0.0%	-0.1%	-0.1%	0.0%
AMS	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-1.2%	0.0%	-0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
SDY	0.0%	-0.5%	-0.6%	-0.7%	-3.1%	-1.0%	-0.8%	-1.2%	0.0%	-1.6%	-3.0%	-0.3%	-0.3%	-0.1%	-0.1%	-0.5%	0.0%	-0.1%	0.0%
UCA	0.0%	-0.1%	-0.4%	-0.4%	-0.4%	-2.1%	-2.1%	-0.2%	-0.1%	-3.0%	-1.5%	-0.6%	-0.6%	-0.3%	-0.2%	-0.3%	0.0%	-0.2%	0.0%
ROM	0.0%	-0.4%	-0.4%	-0.4%	-0.4%	-0.4%	-0.4%	0.0%	0.0%	-0.3%	-0.2%	-0.6%	0.0%	0.0%	0.0%	-0.1%	0.0%	0.0%	0.0%
SYR	0.0%	0.0%	0.0%	0.0%	0.0%	-0.1%	-0.2%	0.0%	0.0%	-0.1%	-0.1%	-0.3%	-0.1%	0.0%	-0.1%	-0.1%	0.0%	0.0%	0.0%
ROC	0.0%	0.0%	0.0%	0.0%	-0.1%	-0.2%	-0.2%	0.0%	0.0%	-0.1%	-0.1%	-0.2%	-0.1%	0.0%	-0.2%	-0.1%	0.0%	0.0%	0.0%
BUF	0.0%	-0.1%	-0.1%	0.0%	0.0%	-0.1%	-0.2%	0.0%	0.0%	-0.1%	-0.1%	-0.2%	-0.1%	0.0%	-0.2%	-0.1%	0.0%	0.0%	0.0%
BFX	0.0%	-0.1%	-0.1%	0.0%	0.0%	-0.1%	-0.3%	0.0%	0.0%	-0.5%	-0.1%	-0.3%	-0.1%	-0.1%	-0.1%	-0.2%	0.0%	0.0%	0.0%
NFL	0.0%	-0.1%	-0.1%	0.0%	-0.1%	-0.1%	-0.3%	0.0%	0.0%	-0.5%	-0.1%	-0.3%	-0.1%	-0.1%	-0.1%	-0.2%	0.0%	0.0%	0.0%
SAR	0.0%	-0.1%	-0.1%	-0.2%	-0.2%	-0.1%	-0.6%	-0.1%	0.0%	-0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grand Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-0.1%	0.0%	-0.2%	0.0%	0.0%	0.0%	-0.1%	0.0%	0.0%	0.0%

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10.2 APPENDIX B: Alternative Operating and Service Plans

10.2.1 Complete List of Sources

Operating Plans- Empire Service-Eastbound, 2009

EMPIRE SERVICE-Eastbound													
Toronto • Niagara Falls • Buffalo • Rochester • Syracuse • Albany • New York													
Train Number ▶	230	250	232	234	252	236	280	254	290	238	284	292	
Normal Days of Operation ▶	Mo-Fr	SaSu	Mo-Fr	Mo-Fr	Sa	Daily	Mo-Sa	Su	Mo-Fr	Daily	Daily	Sa	
Will Also Operate ▶		12/24,12/31, 1/16,2/20			12/24,12/31, 1/16,2/20		1/16,2/20	1/17,2/21				1/16,2/20	
Will Not Operate ▶	1/17,2/21		12/24,12/31, 1/17,2/21	12/24,12/31, 1/17,2/21			1/17,2/21	1/16,2/20	1/17,2/21				
TORONTO, ON (ET) 0 Dp													
Niagara Falls, NY 84							3 50A				6 40A		
Buffalo-Exchange St., NY 107							4 28A				7 18A		
Buffalo-Depew, NY 113							4 44A				7 34A		
Rochester, NY 174							5 37A				8 27A		
Syracuse, NY 254							7 00A		From		9 50A		
Rome, NY 294							7 41A		Rutland		10 31A		
Utica, NY 308							7 57A				10 49A		
Amsterdam, NY 367							8 57A				11 49A		
Fort Edward-Glens Falls, NY 0									9 22A			12 22P	
Lake George Village 13 00													
Saratoga Springs, NY 19									9 43A			12 43P	
Schenectady, NY 385							9 17A		10 23A		12 09P	1 15P	
Albany-Rensselaer, NY 403							9 50A		10 53A		12 50P	1 45P	
	Ar						10 05A	10 05A	11 05A	12 05P	1 05P	2 05P	
	Dp	5 10A	6 05A	6 20A	6 55A	7 05A	8 05A	9 30A	10 30A	11 30A	12 30P	1 30P	2 30P
Hudson, NY 431		5 35A	6 30A	6 45A	7 20A	7 30A	8 30A	10 30A	10 30A	11 30A	12 30P	1 30P	2 30P
Rhinecliff, NY 456		5 56A	6 51A	7 06A	7 41A	7 51A	8 51A	10 51A	10 51A	11 51A	12 51P	1 51P	2 51P
Poughkeepsie, NY 471			7 05A			8 05A	9 05A	11 05A	11 05A	12 05P	1 05P	2 05P	3 05P
Croton-Harmon, NY 512		6 49A	7 45A	8 01A		8 45A	9 45A	11 45A	11 45A	12 45P	1 45P	2 45P	3 45P
Yonkers, NY 530			8 04A			9 04A	10 04A			1 04P	2 04P	3 04P	4 04P
NEW YORK, NY-Penn Sta. (ET) 545 Ar		7 35A	8 35A	8 45A	9 15A	9 35A	10 35A	12 35P	12 35P	1 35P	2 35P	3 35P	4 35P

Train Number ▶	256	242	48	244	68	64	296	288	
Normal Days of Operation ▶	Su	Mo-Fr	Daily	Daily	Daily	Daily	Su	Su	
Will Also Operate ▶	1/17,2/21						1/17,2/21	1/17,2/21	
Will Not Operate ▶	1/16,2/20	1/17,2/21					1/16,2/20	1/16,2/20	
TORONTO, ON (ET) 0 Dp			From			8 30A			
Niagara Falls, NY 84			Chicago			12 40P		2 50P	
Buffalo-Exchange St., NY 107						1 15P		3 28P	
Buffalo-Depew, NY 113			9 08A			1 31P		3 44P	
Rochester, NY 174			10 08A			2 26P		4 38P	
Syracuse, NY 254			11 38A			3 49P	From	6 01P	
Rome, NY 294					From	4 29P	Rutland	6 42P	
Utica, NY 308			12 42P			4 45P		7 00P	
Amsterdam, NY 367						5 45P		8 00P	
Fort Edward-Glens Falls, NY 0					3 30P		6 28P		
Lake George Village 13 00									
Saratoga Springs, NY 19					3 53P		6 57P		
Schenectady, NY 385			2 00P		4 50P	6 05P	7 28P	8 20P	
Albany-Rensselaer, NY 403			D 2 50P D 3 50P	4 15P	5 40P 6 05P	6 47P 7 05P	7 53P 8 05P	9 00P 9 10P	
	Ar	2 05P	3 05P						
Hudson, NY 431		2 30P	3 30P	4 40P	6 30P	7 30P	8 30P	9 35P	
Rhinecliff, NY 456		2 51P	3 51P	5 01P	6 51P	7 51P	8 51P	9 56P	
Poughkeepsie, NY 471		3 05P	4 05P	D 4 47P	5 15P	7 05P	8 05P	10 10P	
Croton-Harmon, NY 512		3 45P	4 45P	D 5 33P	5 55P	7 45P	8 45P	10 50P	
Yonkers, NY 530		4 04P	5 04P		8 04P	9 04P	10 04P		
NEW YORK, NY-Penn Sta. (ET) 545 Ar		4 35P	5 35P	6 35P	6 45P	8 40P	9 35P	10 35P	11 40P

Operating Plans- Empire Service-Westbound, 2009


EMPIRE SERVICE-Westbound										
New York • Albany • Syracuse • Rochester • Buffalo • Niagara Falls • Toronto										
Train Number ▶	63		69		281		233		283	
Normal Days of Operation ▶	Daily		Daily		Daily		Daily		Daily	
Will Also Operate ▶										
Will Not Operate ▶							1/17,2/21			
NEW YORK, NY–Penn Sta. QR (ET)	0	Dp	7 15A	8 15A	10 15A	11 45A	1 15P	2 15P	3 15P	3 45P
Yonkers, NY	14		7 39A	8 39A		12 09P	1 39P	2 39P	3 39P	
Croton-Harmon, NY QR	32		7 58A	8 58A	10 56A	12 29P	1 58P	2 58P	3 58P	R 4 29P
Poughkeepsie, NY QR	73		8 38A	9 38A	11 36A	1 08P	2 38P	3 38P	4 38P	R 5 15P
Rhinecliff-Kingston, NY QR	88		8 52A	9 52A	11 50A	1 19P	2 52P	3 52P	4 52P	
Hudson, NY QR	114		9 15A	10 15A	12 12P	1 42P	3 15P	4 15P	5 15P	
Albany-Rensselaer, NY QR	141	Ar Dp	9 45A 10 03A	10 45A 11 05A	12 45P 12 55P	2 15P	3 45P 3 55P	4 45P	5 45P 6 00P	R 7 05P
Schenectady, NY QR	159		10 26A	11 29A	1 17P		4 17P		6 24P	R 7 31P
Saratoga Springs, NY QR	178			11 57A					6 52P	
Fort Edward-Glens Falls, NY QR	197			12 19P					7 13P	
Lake George Village QR	199									
Amsterdam, NY	177		10 43A		1 34P		4 34P			
Utica, NY QR	237		11 42A		2 29P		5 33P			R 8 44P
Rome, NY	250		11 58A	To Montreal	2 43P		5 48P	To Rutland		
Syracuse, NY	291		12 48P		3 33P		6 38P			R 9 41P
Rochester, NY QR	370		2 04P		4 52P		7 52P			R 11 00P
Buffalo-Depew, NY	431		3 10P		L 5 52P		L 8 52P			R 12 10A
Buffalo-Exchange St., NY	437		3 24P		L 6 06P		L 9 06P			
Niagara Falls, NY	460	Ar	4 33P		7 15P		10 15P			To Chicago
TORONTO, ON QR (ET)	544	Ar	7 37P							

Train Number ▶	237		253		239		293		241	
Normal Days of Operation ▶	Mo-Fr		SaSu		Mo-Th		Fr		Daily	
Will Also Operate ▶			1/17,2/21							
Will Not Operate ▶	1/17,2/21				1/17,2/21				1/17,2/21	
NEW YORK, NY–Penn Sta. QR (ET)	0	Dp	4 40P	5 15P	5 45P	5 45P	7 15P	8 50P	10 50P	11 50P
Yonkers, NY	14			5 39P			7 39P	9 14P		
Croton-Harmon, NY QR	32			5 58P	6 25P	6 25P	7 58P	9 33P	11 31P	12 31A
Poughkeepsie, NY QR	73			6 38P	7 11P	7 11P	8 38P	10 13P	12 11A	1 11A
Rhinecliff-Kingston, NY QR	88		L 6 10P	6 52P	L 7 25P	L 7 25P	L 8 52P	L10 27P	L12 25A	L 1 25A
Hudson, NY QR	114		L 6 33P	7 15P	L 7 48P	L 7 48P	L 9 15P	L10 50P	L12 47A	L 1 47A
Albany-Rensselaer, NY QR	141	Ar Dp	7 00P	7 45P	8 15P	8 15P	9 45P	11 20P	1 20A	2 20A
Schenectady, NY QR	159					8 49P				
Saratoga Springs, NY QR	178					9 17P				
Fort Edward-Glens Falls, NY QR	197					9 38P				
Lake George Village QR	199									
Amsterdam, NY	177									
Utica, NY QR	237									
Rome, NY	250					To Rutland				
Syracuse, NY	291									
Rochester, NY QR	370									
Buffalo-Depew, NY	431									
Buffalo-Exchange St., NY	437									
Niagara Falls, NY	460	Ar								
TORONTO, ON QR (ET)	544	Ar								

Train 263 will operate 1/1/2011 in lieu of Train 261 departing New York 1:00 a.m.

Operating Plans- Empire Service-Eastbound, 2018


110 MPH, EASTBOUND, 2018 PLAN

		Train	Leave	Leave	Leave	Leave	Leave	Leave	Leave	Leave	Leave	Leave	Leave	Albany-Rensselaer	Leave	Leave	Leave	Leave	Leave	Arrive		
Train	Freq	originates at:	Niagara Falls	Buffalo Exchange	Buffalo Depew	Rochester	Geneva	Syracuse	Rome	Utica	Amster dam	Saratoga	Schenec tady	Arrive	Leave	Hudson	Rhine cliff	Pough keepsie	Croton Harmon	Yonkers	New York	
230	Mon-Fri														5:10 AM	5:34 AM	5:55 AM	no stop	6:42 AM	no stop	7:20 AM	
232	Daily														6:10 AM	6:34 AM	6:55 AM	no stop	no stop	no stop	8:15 AM	
254	Mon-Fri											6:10 AM	6:41 AM	7:05 AM		7:10 AM	7:34 AM	7:55 AM	no stop	no stop	no stop	9:15 AM
256	ExSun											7:10 AM	7:41 AM	8:05 AM	8:10 AM	8:34 AM	8:55 AM	9:09 AM	9:45 AM	no stop	10:25 AM	
252	Mon-Fri											8:00 AM	8:31 AM	8:55 AM								
238	Mon-Fri														9:10 AM	9:34 AM	9:55 AM	no stop	10:43 AM	11:02 AM	11:25 AM	
280	ExSun		5:05 AM	5:36 AM	5:53 AM	6:40 AM		7:43 AM	8:16 AM	8:33 AM	9:15 AM		9:31 AM	9:56 AM	10:10 AM	10:34 AM	10:55 AM	11:09 AM	11:45 AM	no stop	12:25 PM	
290	Daily	Rutland										10:00 AM	10:31 AM	10:55 AM	11:10 AM	11:34 AM	11:55 AM	no stop	12:43 PM	1:02 PM	1:25 PM	
262	Daily						8:45 AM	9:43 AM	10:16 AM	10:33 AM	11:15 AM		11:31 AM	11:56 AM	12:10 PM	12:34 PM	12:55 PM	1:09 PM	1:45 PM	no stop	2:25 PM	
284	ExSun		9:05 AM	9:36 AM	9:53 AM	10:40 AM		11:43 AM	12:16 PM	12:33 PM	1:15 PM		1:31 PM	1:56 PM	2:10 PM	2:34 PM	2:55 PM	3:09 PM	3:45 PM	4:04 PM	4:25 PM	
244	Daily														3:10 PM	3:34 PM	3:55 PM	no stop	4:43 PM	5:02 PM	5:25 PM	
246	ExSat														4:10 PM	4:34 PM	4:55 PM	no stop	no stop	no stop	6:15 PM	
48	Daily	Chicago			11:35 AM	12:25 PM		1:31 PM	no stop	2:21 PM	no stop		3:22 PM	4:00 PM	4:30 PM	no stop	no stop	no stop	6:00 PM	no stop	6:40 PM	
294	Daily	Cleveland			12:53 PM	1:40 PM		2:43 PM	3:16 PM	3:33 PM	4:15 PM		4:31 PM	4:56 PM	5:10 PM	5:34 PM	5:55 PM	6:09 PM	6:45 PM	no stop	7:25 PM	
68	Daily	Montreal										4:50 PM	5:21 PM	5:55 PM	6:10 PM	6:34 PM	6:55 PM	7:09 PM	7:45 PM	8:04 PM	8:25 PM	
64	Daily	Toronto	2:05 PM	2:36 PM	2:53 PM	3:40 PM		4:43 PM	5:16 PM	5:33 PM	6:15 PM		6:31 PM	6:56 PM	7:10 PM	7:34 PM	7:55 PM	8:09 PM	8:45 PM	9:04 PM	9:25 PM	
286	ExSat		4:05 PM	4:36 PM	4:53 PM	5:40 PM		6:43 PM	7:16 PM	7:33 PM	8:15 PM		8:31 PM	8:56 PM	9:10 PM	9:34 PM	9:55 PM	10:09 PM	10:45 PM	11:04 PM	11:25 PM	

90 MPH, EASTBOUND, 2018 PLAN

Train	Freq	Train originates at:	Leave	Leave	Leave	Leave	Leave	Leave	Leave	Leave	Leave	Leave	Leave	Albany-Rensselaer		Leave	Leave	Leave	Leave	Leave	Arrive	
			Niagara Falls	Buffalo Exchange	Buffalo Depew	Rochester	Geneva	Syracuse	Rome	Utica	Amster dam	Saratoga	Schenec tady	Arrive	Leave	Hudson	Rhine cliff	Pough keepsie	Croton Harmon	Yonkers	New York	
230	Mon-Fri														5:10 AM	5:34 AM	5:55 AM		6:42 AM	no stop	7:20 AM	
232	Daily														6:10 AM	6:34 AM	6:55 AM	no stop	no stop	no stop	8:15 AM	
234	Sat-Sun														7:10 AM	7:34 AM	7:55 AM	8:09 AM	8:45 AM	9:04 AM	9:25 AM	
254	Mon-Fri										6:10 AM	6:41 AM	7:05 AM		7:10 AM	7:34 AM	7:55 AM	no stop	no stop	no stop	9:15 AM	
256	ExSun										7:10 AM	7:41 AM	8:05 AM		8:10 AM	8:34 AM	8:55 AM	9:09 AM	9:45 AM	no stop	10:25 AM	
236	Sun Only														8:10 AM	8:34 AM	8:55 AM	9:09 AM	9:45 AM	10:04 AM	10:25 AM	
252	Mon-Fri										8:00 AM	8:31 AM	8:55 AM									
238	Mon-Fri														↘	9:10 AM	9:34 AM	9:55 AM	no stop	10:43 AM	11:02 AM	11:25 AM
240	Sat-Sun											8:00 AM	8:31 AM	8:55 AM	9:10 AM	9:34 AM	9:55 AM	10:09 AM	10:45 AM	11:04 AM	11:25 AM	
280	ExSun		4:50 AM	5:21 AM	5:37 AM	6:28 AM		7:35 AM	8:09 AM	8:27 AM	9:12 AM		9:29 AM	9:55 AM	10:10 AM	10:34 AM	10:55 AM	11:09 AM	11:45 AM	no stop	12:25 PM	
290	Daily	Rutland										10:00 AM	10:31 AM	10:55 AM	11:10 AM	11:34 AM	11:55 AM	no stop	12:43 PM	1:02 PM	1:25 PM	
262	Daily						8:35 AM	9:35 AM	10:09 AM	10:27 AM	11:12 AM		11:29 AM	11:55 AM	12:10 PM	12:34 PM	12:55 PM	1:09 PM	1:45 PM	no stop	2:25 PM	
284	ExSun		8:50 AM	9:21 AM	9:37 AM	10:28 AM		11:35 AM	12:09 PM	12:27 PM	1:12 PM		1:29 PM	1:55 PM	2:10 PM	2:34 PM	2:55 PM	3:09 PM	3:45 PM	4:04 PM	4:25 PM	
242	Sun Only														2:10 PM	2:34 PM	2:55 PM	3:09 PM	3:45 PM	4:04 PM	4:25 PM	
244	Daily														3:10 PM	3:34 PM	3:55 PM	no stop	4:43 PM	5:02 PM	5:25 PM	
246	ExSat														4:10 PM	4:34 PM	4:55 PM	no stop	no stop	no stop	6:15 PM	
48	Daily	Chicago			11:19 AM	12:13 PM		1:23 PM	no stop	2:16 PM	no stop		3:21 PM	4:00 PM	4:30 PM	no stop	no stop	no stop	6:00 PM	no stop	6:40 PM	
294	Daily	Cleveland			12:37 PM	1:28 PM		2:35 PM	3:09 PM	3:27 PM	4:12 PM		4:29 PM	4:55 PM	5:10 PM	5:34 PM	5:55 PM	6:09 PM	6:45 PM	no stop	7:25 PM	
68	Daily	Montreal										4:50 PM	5:21 PM	5:55 PM	6:10 PM	6:34 PM	6:55 PM	7:09 PM	7:45 PM	8:04 PM	8:25 PM	
64	Daily	Toronto	1:50 PM	2:21 PM	2:37 PM	3:28 PM		4:35 PM	5:09 PM	5:27 PM	6:12 PM		6:29 PM	6:55 PM	7:10 PM	7:34 PM	7:55 PM	8:09 PM	8:45 PM	9:04 PM	9:25 PM	
286	ExSat		3:50 PM	4:21 PM	4:37 PM	5:28 PM		6:35 PM	7:09 PM	7:27 PM	8:12 PM		8:29 PM	8:55 PM	9:10 PM	9:34 PM	9:55 PM	10:09 PM	10:45 PM	11:04 PM	11:25 PM	

79 MPH, EASTBOUND, 2018 PLAN

		Train originates at:	Leave Niagara Falls	Leave Buffalo Exchange	Leave Buffalo Depew	Leave Rochester	Leave Geneva	Leave Syracuse	Leave Rome	Leave Utica	Leave Amster dam	Leave Saratoga	Leave Schenecc tady	Albany-Rensselaer		Leave Hudson	Leave Rhine cliff	Leave Pough keepsie	Leave Croton Harmon	Leave Yonkers	Arrive New York
Train	Freq													Arrive	Leave						
230	Mon-Fri														5:10 AM	5:34 AM	5:55 AM	no stop	6:42 AM	no stop	7:20 AM
232	Daily														6:10 AM	6:34 AM	6:55 AM	no stop	no stop	no stop	8:15 AM
234	Sat-Sun														7:10 AM	7:34 AM	7:55 AM	8:09 AM	8:45 AM	9:04 AM	9:25 AM
254	Mon-Fri										6:10 AM	6:41 AM	7:05 AM	7:10 AM	7:34 AM	7:55 AM	no stop	no stop	no stop	9:15 AM	
256	ExSun										7:10 AM	7:41 AM	8:05 AM	8:10 AM	8:34 AM	8:55 AM	9:09 AM	9:45 AM	no stop	10:25 AM	
236	Sun Only													8:10 AM	8:34 AM	8:55 AM	9:09 AM	9:45 AM	10:04 AM	10:25 AM	
252	Mon-Fri										8:00 AM	8:31 AM	8:55 AM								
238	Mon-Fri														9:10 AM	9:34 AM	9:55 AM	no stop	10:43 AM	11:02 AM	11:25 AM
240	Sat-Sun										8:00 AM	8:31 AM	8:55 AM	9:10 AM	9:34 AM	9:55 AM	10:09 AM	10:45 AM	11:04 AM	11:25 AM	
280	ExSun		4:30 AM	5:01 AM	5:17 AM	6:12 AM		7:24 AM	8:02 AM	8:20 AM	9:10 AM		9:28 AM	9:54 AM	10:10 AM	10:34 AM	10:55 AM	11:09 AM	11:45 AM	no stop	12:25 PM
290	Daily	Rutland										10:00 AM	10:31 AM	10:55 AM	11:10 AM	11:34 AM	11:55 AM	no stop	12:43 PM	1:02 PM	1:25 PM
262	Daily						8:20 AM	9:24 AM	10:02 AM	10:20 AM	11:10 AM		11:28 AM	11:54 AM	12:10 PM	12:34 PM	12:55 PM	1:09 PM	1:45 PM	no stop	2:25 PM
284	ExSun		8:30 AM	9:01 AM	9:17 AM	10:12 AM		11:24 AM	12:02 PM	12:20 PM	1:10 PM		1:28 PM	1:54 PM	2:10 PM	2:34 PM	2:55 PM	3:09 PM	3:45 PM	4:04 PM	4:25 PM
242	Sun Only														2:10 PM	2:34 PM	2:55 PM	3:09 PM	3:45 PM	4:04 PM	4:25 PM
244	Daily														3:10 PM	3:34 PM	3:55 PM	no stop	4:43 PM	5:02 PM	5:25 PM
246	ExSat														4:10 PM	4:34 PM	4:55 PM	no stop	no stop	no stop	6:15 PM
48	Daily	Chicago			11:03 AM	12:02 PM		1:17 PM	no stop	2:12 PM	no stop		3:21 PM	4:00 PM	4:30 PM	no stop	no stop	no stop	6:00 PM	no stop	6:40 PM
294	Daily	Cleveland			12:17 PM	1:12 PM		2:24 PM	3:02 PM	3:20 PM	4:10 PM		4:31 PM	4:54 PM	5:10 PM	5:34 PM	5:55 PM	6:09 PM	6:45 PM	no stop	7:25 PM
68	Daily	Montreal										4:50 PM	5:21 PM	5:55 PM	6:10 PM	6:34 PM	6:55 PM	7:09 PM	7:45 PM	8:04 PM	8:25 PM
64	Daily	Toronto	1:30 PM	2:01 PM	2:17 PM	3:12 PM		4:24 PM	5:02 PM	5:20 PM	6:10 PM		6:31 PM	6:54 PM	7:10 PM	7:34 PM	7:55 PM	8:09 PM	8:45 PM	9:04 PM	9:25 PM
286	ExSat		3:30 PM	4:01 PM	4:17 PM	5:12 PM		6:24 PM	7:02 PM	7:20 PM	8:10 PM		8:28 PM	8:54 PM	9:10 PM	9:34 PM	9:55 PM	10:09 PM	10:45 PM	11:04 PM	11:25 PM

Operating Plans- Empire Service-Westbound, 2018

110 MPH, WESTBOUND, 2018 PLAN

Train	Freq	Leave	Leave	Leave	Leave	Leave	Leave	Albany-Rensselaer		Arrive	Arrive	Arrive	Arrive	Arrive	Arrive	Arrive	Arrive	Arrive	Arrive	Arrive	Train continues to
		New York	Yonkers	Croton Harton	Pough keepsie	Rhine cliff	Hudson	Arrive	Leave	Schenec tady	Saratoga	Amster dam	Utica	Rome	Syracuse	Geneva	Rochester	Buffalo Depew	Buffalo Exchange	Niagara Falls	
281	Mon-Fri	4:15 AM	4:37 AM	4:57 AM	5:34 AM	5:47 AM	6:09 AM	6:30 AM	6:45 AM	7:02 AM		7:18 AM	8:02 AM	8:17 AM	8:53 AM		9:55 AM	10:44 AM	11:00 AM	11:36 AM	
63	Daily	7:15 AM	7:37 AM	7:57 AM	8:34 AM	8:47 AM	9:09 AM	9:30 AM	9:45 AM	10:02 AM		10:18 AM	11:02 AM	11:17 AM	11:53 AM		12:55 PM	1:44 PM	2:00 PM	2:36 PM	Toronto
69	Daily	8:15 AM	8:37 AM	8:57 AM	9:34 AM	9:47 AM	10:09 AM	10:30 AM	10:45 AM	11:03 AM	11:33 AM									Montreal	
295	Daily	9:15 AM	no stop	9:54 AM	10:31 AM	10:44 AM	11:07 AM	11:30 AM	11:45 AM	12:02 PM		12:18 PM	1:02 PM	1:17 PM	1:53 PM		2:55 PM	3:47 PM			Cleveland
283	Daily	11:15 AM	11:37 AM	11:57 AM	no stop	12:44 PM	1:07 PM	1:30 PM	1:45 PM	2:02 PM		2:18 PM	3:02 PM	3:17 PM	3:53 PM		4:55 PM	5:44 PM	6:00 PM	6:36 PM	
233	Daily	12:15 PM	12:37 PM	12:57 PM	1:34 PM	1:47 PM	2:09 PM	2:30 PM													
261	Daily	1:15 PM	no stop	1:54 PM	2:31 PM	2:44 PM	3:07 PM	3:30 PM	3:45 PM	4:02 PM		4:18 PM	5:02 PM	5:17 PM	5:53 PM	6:50 PM					
291	Daily	2:15 PM	2:37 PM	2:57 PM	no stop	3:44 PM	4:07 PM	4:30 PM	4:40 PM	4:58 PM	5:27 PM										Rutland
253	Mon-Fri								5:30 PM	5:48 PM	6:17 PM										
285	Daily	3:15 PM	no stop	3:54 PM	4:31 PM	4:44 PM	5:07 PM	5:30 PM	5:45 PM	6:02 PM		6:18 PM	7:02 PM	7:17 PM	7:53 PM		8:55 PM	9:44 PM	10:00 PM	10:36 PM	
255	Mon-Fri	4:15 PM	no stop	no stop	no stop	5:39 PM	6:01 PM	6:20 PM	6:30 PM	6:48 PM	7:17 PM										
257	ExSat	5:15 PM	no stop	no stop	no stop	6:39 PM	7:01 PM	7:20 PM	7:30 PM	7:48 PM	8:17 PM										
235	Daily	6:15 PM	6:37 PM	6:57 PM	7:34 PM	7:47 PM	8:09 PM	8:30 PM													
49	daily	6:45 PM	no stop	7:25 PM	no stop	no stop	no stop	9:00 PM	9:40 PM	10:00 PM		no stop	11:01 PM	no stop	11:51 PM		12:56 AM	1:52 AM			Chicago
241	ExSat	7:15 PM	7:37 PM	7:57 PM	8:34 PM	8:47 PM	9:09 PM	9:30 PM													
243	Daily	8:15 PM	8:37 PM	8:57 PM	9:34 PM	9:47 PM	10:09 PM	10:30 PM													
245	Daily	10:15 PM	10:37 PM	10:57 PM	11:34 PM	11:47 PM	12:09 AM	12:30 AM													

90 MPH, WESTBOUND, 2018 PLAN

Train	Freq	Leave	Leave	Leave	Leave	Leave	Leave	Albany-Rensselaer		Arrive	Arrive	Arrive	Arrive	Arrive	Arrive	Arrive	Arrive	Arrive	Arrive	Arrive	Train continues to
		New York	Yonkers	Croton Harton	Pough keepsie	Rhine cliff	Hudson	Arrive	Leave	Schenec tady	Saratoga	Amster dam	Utica	Rome	Syracuse	Geneva	Rochester	Buffalo Depew	Buffalo Exchange	Niagara Falls	
281	Mon-Fri	4:15 AM	4:37 AM	4:57 AM	5:34 AM	5:47 AM	6:09 AM	6:30 AM	6:45 AM	7:02 AM		7:19 AM	8:06 AM	8:22 AM	8:59 AM		10:05 AM	10:58 AM	11:14 AM	11:50 AM	
63	Daily	7:15 AM	7:37 AM	7:57 AM	8:34 AM	8:47 AM	9:09 AM	9:30 AM	9:45 AM	10:02 AM		10:19 AM	11:06 AM	11:22 AM	11:59 AM		1:05 PM	1:58 PM	2:14 PM	2:50 PM	Toronto
69	Daily	8:15 AM	8:37 AM	8:57 AM	9:34 AM	9:47 AM	10:09 AM	10:30 AM	10:45 AM	11:03 AM	11:33 AM										Montreal
295	Daily	9:15 AM	no stop	9:54 AM	10:31 AM	10:44 AM	11:07 AM	11:30 AM	11:45 AM	12:02 PM		12:19 PM	1:06 PM	1:22 PM	1:59 PM		3:05 PM	4:01 PM			Cleveland
283	Daily	11:15 AM	11:37 AM	11:57 AM	no stop	12:44 PM	1:07 PM	1:30 PM	1:45 PM	2:02 PM		2:19 PM	3:06 PM	3:22 PM	3:59 PM		5:05 PM	5:58 PM	6:14 PM	6:50 PM	
233	Daily	12:15 PM	12:37 PM	12:57 PM	1:34 PM	1:47 PM	2:09 PM	2:30 PM													
261	Daily	1:15 PM	no stop	1:54 PM	2:31 PM	2:44 PM	3:07 PM	3:30 PM	3:45 PM	4:02 PM		4:19 PM	5:06 PM	5:22 PM	5:59 PM	6:59 PM					
291	Daily	2:15 PM	2:37 PM	2:57 PM	no stop	3:44 PM	4:07 PM	4:30 PM	4:40 PM	4:58 PM	5:27 PM										Rutland
253	Mon-Fri								5:30 PM	5:48 PM	6:17 PM										
285		3:15 PM	no stop	3:54 PM	4:31 PM	4:44 PM	5:07 PM	5:30 PM	5:45 PM	6:02 PM		6:19 PM	7:06 PM	7:22 PM	7:59 PM		9:05 PM	9:58 PM	10:14 PM	10:50 PM	
255	Mon-Fri	4:15 PM	no stop	no stop	no stop	5:39 PM	6:01 PM	6:20 PM	6:30 PM	6:48 PM	7:17 PM										
257	ExSat	5:15 PM	no stop	no stop	no stop	6:39 PM	7:01 PM	7:20 PM	7:30 PM	7:48 PM	8:17 PM										
235	Daily	6:15 PM	6:37 PM	6:57 PM	7:34 PM	7:47 PM	8:09 PM	8:30 PM													
49	daily	6:45 PM	no stop	7:25 PM	no stop	no stop	no stop	9:00 PM	9:40 PM	10:00 PM		no stop	11:04 PM	no stop	11:56 PM		1:05 AM	2:05 AM			Chicago
241	ExSat	7:15 PM	7:37 PM	7:57 PM	8:34 PM	8:47 PM	9:09 PM	9:30 PM													
243	Daily	8:15 PM	8:37 PM	8:57 PM	9:34 PM	9:47 PM	10:09 PM	10:30 PM													
245	Daily	10:15 PM	10:37 PM	10:57 PM	11:34 PM	11:47 PM	12:09 AM	12:30 AM													

79 MPH, WESTBOUND, 2018 PLAN

Train	Freq	Leave	Leave	Leave	Leave	Leave	Leave	Albany-Rensselaer		Arrive	Arrive	Arrive	Arrive	Arrive	Arrive	Arrive	Arrive	Arrive	Arrive	Train	
		New York	Yonkers	Croton Harton	Pough keepsie	Rhine cliff	Hudson	Arrive	Leave	Schenec tady	Saratoga	Amster dam	Utica	Rome	Syracuse	Geneva	Rochester	Buffalo Depew	Buffalo Exchange	Niagara Falls	continues to
281	Mon-Fri	4:15 AM	4:37 AM	4:57 AM	5:34 AM	5:47 AM	6:09 AM	6:30 AM	6:45 AM	7:02 AM		7:20 AM	8:12 AM	8:28 AM	9:09 AM		10:20 AM	11:17 AM	11:33 AM	12:13 PM	
63	Daily	7:15 AM	7:37 AM	7:57 AM	8:34 AM	8:47 AM	9:09 AM	9:30 AM	9:45 AM	10:02 AM		10:20 AM	11:12 AM	11:28 AM	12:09 PM		1:20 PM	2:17 PM	2:33 PM	3:13 PM	Toronto
69	Daily	8:15 AM	8:37 AM	8:57 AM	9:34 AM	9:47 AM	10:09 AM	10:30 AM	10:45 AM	11:03 AM	11:33 AM									Montreal	
295	Daily	9:15 AM	no stop	9:54 AM	10:31 AM	10:44 AM	11:07 AM	11:30 AM	11:45 AM	12:02 PM		12:20 PM	1:12 PM	1:28 PM	2:09 PM		3:20 PM	4:20 PM		Cleveland	
283	Daily	11:15 AM	11:37 AM	11:57 AM	no stop	12:44 PM	1:07 PM	1:30 PM	1:45 PM	2:02 PM		2:20 PM	3:12 PM	3:28 PM	4:09 PM		5:20 PM	6:17 PM	6:33 PM	7:13 PM	
233	Daily	12:15 PM	12:37 PM	12:57 PM	1:34 PM	1:47 PM	2:09 PM	2:30 PM													
261	Daily	1:15 PM	no stop	1:54 PM	2:31 PM	2:44 PM	3:07 PM	3:30 PM	3:45 PM	4:02 PM		4:20 PM	5:12 PM	5:28 PM	6:09 PM	7:10 PM					
291	Daily	2:15 PM	2:37 PM	2:57 PM	no stop	3:44 PM	4:07 PM	4:30 PM	4:40 PM	4:58 PM	5:27 PM									Rutland	
253	Mon-Fri							5:30 PM	5:48 PM	6:17 PM											
285		3:15 PM	no stop	3:54 PM	4:31 PM	4:44 PM	5:07 PM	5:30 PM	5:45 PM	6:02 PM		6:20 PM	7:12 PM	7:28 PM	8:09 PM		9:20 PM	10:17 PM	10:33 PM	11:13 PM	
255	Daily	4:15 PM	no stop	no stop	no stop	5:39 PM	6:01 PM	6:20 PM	6:30 PM	6:48 PM	7:17 PM										
W255			4:37 PM	4:57 PM	5:34 PM	5:47 PM	6:09 PM	6:30 PM	6:40 PM	6:58 PM	7:27 PM										
257	ExSat	5:15 PM	no stop	no stop	no stop	6:39 PM	7:01 PM	7:20 PM	7:30 PM	7:48 PM	8:17 PM										
235	Daily	6:15 PM	6:37 PM	6:57 PM	7:34 PM	7:47 PM	8:09 PM	8:30 PM													
49	daily	6:45 PM	no stop	7:25 PM	no stop	no stop	no stop	9:00 PM	9:40 PM	10:00 PM		no stop	11:03 PM	no stop	11:59 PM		1:13 AM	2:17 AM		Chicago	
241	ExSat	7:15 PM	7:37 PM	7:57 PM	8:34 PM	8:47 PM	9:09 PM	9:30 PM													
243	Daily	8:15 PM	8:37 PM	8:57 PM	9:34 PM	9:47 PM	10:09 PM	10:30 PM													
245	Daily	10:15 PM	10:37 PM	10:57 PM	11:34 PM	11:47 PM	12:09 AM	12:30 AM													

Operating Plans- Empire Service-Eastbound, 2035

110 MPH, EASTBOUND, 2035 PLAN

	Train originates at	Leave Niagara Falls	Leave Buffalo Exchange	Leave Buffalo Depew	Leave Rochester	Leave Geneva	Leave Syracuse	Leave Rome	Leave Utica	Leave Amster dam	Leave Saratoga	Leave Schenec tady	Albany-Rensselaer		Leave Hudson	Leave Rhine cliff	Leave Pough keepsie	Leave Croton Harmon	Leave Yonkers	Arrive New York
Train													Arrive	Leave						
230														5:10 AM	5:34 AM	5:55 AM	no stop	6:42 AM	no stop	7:20 AM
232														6:10 AM	6:34 AM	6:55 AM	no stop	no stop	no stop	8:15 AM
SYR02							4:43 AM	5:16 AM	5:33 AM	6:15 AM		6:31 AM	6:56 AM	7:10 AM	7:34 AM	7:55 AM	8:09 AM	8:45 AM	9:04 AM	9:25 AM
256													6:10 AM	6:41 AM	7:05 AM	7:10 AM	7:34 AM	7:55 AM	no stop	no stop
252													7:45 AM	8:16 AM	8:40 AM					
NFL00		4:05 AM	4:36 AM	4:53 AM	5:40 AM		6:43 AM	7:16 AM	7:33 AM	8:15 AM		8:31 AM	8:56 AM	9:10 AM	9:34 AM	9:55 AM	no stop	10:43 AM	11:02 AM	11:25 AM
280		5:05 AM	5:36 AM	5:53 AM	6:40 AM		7:43 AM	8:16 AM	8:33 AM	9:15 AM		9:31 AM	9:56 AM	10:10 AM	10:34 AM	10:55 AM	11:09 AM	11:45 AM	no stop	12:25 PM
NFL02		6:05 AM	6:36 AM	6:53 AM	7:40 AM		8:43 AM	9:16 AM	9:33 AM	10:15 AM		10:31 AM	10:56 AM	11:10 AM	11:34 AM	11:55 AM	no stop	12:43 PM	1:02 PM	1:25 PM
290	Rutland										10:30 AM	11:01 AM	11:25 AM	11:40 AM	12:04 PM	12:25 PM	12:39 PM	1:15 PM	no stop	1:55 PM
NFL04		7:05 AM	7:36 AM	7:53 AM	8:40 AM		9:43 AM	10:16 AM	10:33 AM	11:15 AM		11:31 AM	11:56 AM	12:10 PM	12:34 PM	12:55 PM	no stop	1:43 PM	2:02 PM	2:25 PM
262						9:45 AM	10:43 AM	11:16 AM	11:33 AM	12:15 PM		12:31 PM	12:56 PM	1:10 PM	1:34 PM	1:55 PM	2:09 PM	2:45 PM	no stop	3:25 PM
284		9:05 AM	9:36 AM	9:53 AM	10:40 AM		11:43 AM	12:16 PM	12:33 PM	1:15 PM		1:31 PM	1:56 PM	2:10 PM	2:34 PM	2:55 PM	no stop	3:43 PM	4:02 PM	4:25 PM
NFL06		10:05 AM	10:36 AM	10:53 AM	11:40 AM		12:43 PM	1:16 PM	1:33 PM	2:15 PM		2:31 PM	2:56 PM	3:10 PM	3:34 PM	3:55 PM	4:09 PM	4:45 PM	no stop	5:25 PM
246														4:10 PM	4:34 PM	4:55 PM	no stop	no stop	no stop	6:15 PM
48	Chicago			11:36 AM	12:25 PM		1:31 PM	no stop	2:21 PM	no stop		3:22 PM	4:00 PM	4:30 PM	no stop	no stop	no stop	6:00 PM	no stop	6:40 PM
NFL08		12:05 PM	12:36 PM	12:53 PM	1:40 PM		2:43 PM	3:16 PM	3:33 PM	4:15 PM		4:31 PM	4:56 PM	5:10 PM	5:34 PM	5:55 PM	6:09 PM	6:45 PM	no stop	7:25 PM
248														5:40 PM	6:04 PM	6:25 PM	no stop	7:13 PM	7:32 PM	7:55 PM
294	Cleveland			1:53 PM	2:40 PM		3:43 PM	4:16 PM	4:33 PM	5:15 PM		5:31 PM	5:56 PM	6:10 PM	6:34 PM	6:55 PM	7:09 PM	7:45 PM	no stop	8:25 PM
68	Montreal										5:20 PM	5:51 PM	6:25 PM	6:40 PM	7:04 PM	7:25 PM	7:39 PM	8:15 PM	8:34 PM	8:55 PM
64	Toronto	2:05 PM	2:36 PM	2:53 PM	3:40 PM		4:43 PM	5:16 PM	5:33 PM	6:15 PM		6:31 PM	6:56 PM	7:10 PM	7:34 PM	7:55 PM	8:09 PM	8:45 PM	9:04 PM	9:25 PM
NFL10		3:05 PM	3:36 PM	3:53 PM	4:40 PM		5:43 PM	6:16 PM	6:33 PM	7:15 PM		7:31 PM	7:56 PM	8:10 PM	8:34 PM	8:55 PM	9:09 PM	9:45 PM	10:04 PM	10:25 PM
286		4:05 PM	4:36 PM	4:53 PM	5:40 PM		6:43 PM	7:16 PM	7:33 PM	8:15 PM		8:31 PM	8:56 PM	9:10 PM	9:34 PM	9:55 PM	10:09 PM	10:45 PM	11:04 PM	11:25 PM

90 MPH, EASTBOUND, 2035 PLAN

	Train originates at	Leave Niagara Falls	Leave Buffalo Exchange	Leave Buffalo Depew	Leave Rochester	Leave Geneva	Leave Syracuse	Leave Rome	Leave Utica	Leave Amster dam	Leave Saratoga	Leave Schenec tady	Albany-Rensselaer	Leave Hudson	Leave Rhine cliff	Leave Pough keepsie	Leave Croton Harmon	Leave Yonkers	Arrive New York	
230														5:10 AM	5:34 AM	5:55 AM	no stop	6:42 AM	no stop	7:20 AM
232														6:10 AM	6:34 AM	6:55 AM	no stop	no stop	no stop	8:15 AM
SYR02							4:35 AM	5:09 AM	5:27 AM	6:12 AM		6:29 AM	6:55 AM	7:10 AM	7:34 AM	7:55 AM	8:09 AM	8:45 AM	9:04 AM	9:25 AM
256											6:10 AM	6:41 AM	7:05 AM	7:10 AM	7:34 AM	7:55 AM	no stop	no stop	no stop	9:15 AM
252											7:45 AM	8:16 AM	8:40 AM							
NFL00		3:50 AM	4:21 AM	4:37 AM	5:28 AM		6:35 AM	7:09 AM	7:27 AM	8:12 AM		8:29 AM	8:55 AM	9:10 AM	9:34 AM	9:55 AM	no stop	10:43 AM	11:02 AM	11:25 AM
280		4:50 AM	5:21 AM	5:37 AM	6:28 AM		7:35 AM	8:09 AM	8:27 AM	9:12 AM		9:29 AM	9:55 AM	10:10 AM	10:34 AM	10:55 AM	11:09 AM	11:45 AM	no stop	12:25 PM
NFL02		5:50 AM	6:21 AM	6:37 AM	7:28 AM		8:35 AM	9:09 AM	9:27 AM	10:12 AM		10:29 AM	10:55 AM	11:10 AM	11:34 AM	11:55 AM	no stop	12:43 PM	1:02 PM	1:25 PM
290	Rutland										10:30 AM	11:01 AM	11:25 AM	11:40 AM	12:04 PM	12:25 PM	12:39 PM	1:15 PM	no stop	1:55 PM
NFL04		6:50 AM	7:21 AM	7:37 AM	8:28 AM		9:35 AM	10:09 AM	10:27 AM	11:12 AM		11:29 AM	11:55 AM	12:10 PM	12:34 PM	12:55 PM	no stop	1:43 PM	2:02 PM	2:25 PM
262						9:35 AM	10:35 AM	11:09 AM	11:27 AM	12:12 PM		12:29 PM	12:55 PM	1:10 PM	1:34 PM	1:55 PM	2:09 PM	2:45 PM	no stop	3:25 PM
284		8:50 AM	9:21 AM	9:37 AM	10:28 AM		11:35 AM	12:09 PM	12:27 PM	1:12 PM		1:29 PM	1:55 PM	2:10 PM	2:34 PM	2:55 PM	no stop	3:43 PM	4:02 PM	4:25 PM
NFL06		9:50 AM	10:21 AM	10:37 AM	11:28 AM		12:35 PM	1:09 PM	1:27 PM	2:12 PM		2:29 PM	2:55 PM	3:10 PM	3:34 PM	3:55 PM	4:09 PM	4:45 PM	no stop	5:25 PM
246													4:10 PM	4:34 PM	4:55 PM	no stop	no stop	no stop	6:15 PM	
48	Chicago			11:19 AM	12:13 PM		1:23 PM	no stop	2:16 PM	no stop		3:21 PM	4:00 PM	4:30 PM	no stop	no stop	no stop	6:00 PM	no stop	6:40 PM
NFL08		11:50 AM	12:21 PM	12:37 PM	1:28 PM		2:35 PM	3:09 PM	3:27 PM	4:12 PM		4:29 PM	4:55 PM	5:10 PM	5:34 PM	5:55 PM	6:09 PM	6:45 PM	no stop	7:25 PM
248													5:40 PM	6:04 PM	6:25 PM	no stop	7:13 PM	7:32 PM	7:55 PM	
294	Cleveland			1:37 PM	2:28 PM		3:35 PM	4:09 PM	4:27 PM	5:12 PM		5:29 PM	5:55 PM	6:10 PM	6:34 PM	6:55 PM	7:09 PM	7:45 PM	no stop	8:25 PM
68	Montreal										5:20 PM	5:51 PM	6:25 PM	6:40 PM	7:04 PM	7:25 PM	7:39 PM	8:15 PM	8:34 PM	8:55 PM
64	Toronto	1:50 PM	2:21 PM	2:37 PM	3:28 PM		4:35 PM	5:09 PM	5:27 PM	6:12 PM		6:29 PM	6:55 PM	7:10 PM	7:34 PM	7:55 PM	8:09 PM	8:45 PM	9:04 PM	9:25 PM
NFL10		2:50 PM	3:21 PM	3:37 PM	4:28 PM		5:35 PM	6:09 PM	6:27 PM	7:12 PM		7:29 PM	7:55 PM	8:10 PM	8:34 PM	8:55 PM	9:09 PM	9:45 PM	10:04 PM	10:25 PM
286		3:50 PM	4:21 PM	4:37 PM	5:28 PM		6:35 PM	7:09 PM	7:27 PM	8:12 PM		8:29 PM	8:55 PM	9:10 PM	9:34 PM	9:55 PM	10:09 PM	10:45 PM	11:04 PM	11:25 PM

79 MPH, EASTBOUND, 2035 PLAN

	Train originates at	Leave Niagara Falls	Leave Buffalo Exchange	Leave Buffalo Depew	Leave Rochester	Leave Geneva	Leave Syracuse	Leave Rome	Leave Utica	Leave Amster dam	Leave Saratoga	Leave Schenec tady	Albany-Rensselaer		Leave Hudson	Leave Rhine cliff	Leave Pough keepsie	Leave Croton Harmon	Leave Yonkers	Arrive New York
Train													Arrive	Leave						
230														5:10 AM	5:34 AM	5:55 AM	no stop	6:42 AM	no stop	7:20 AM
232														6:10 AM	6:34 AM	6:55 AM	no stop	no stop	no stop	8:15 AM
SYR02							4:24 AM	5:02 AM	5:20 AM	6:10 AM		6:28 AM	6:54 AM	7:10 AM	7:34 AM	7:55 AM	8:09 AM	8:45 AM	9:04 AM	9:25 AM
256											6:10 AM	6:41 AM	7:05 AM	7:10 AM	7:34 AM	7:55 AM	no stop	no stop	no stop	9:15 AM
252											7:45 AM	8:16 AM	8:40 AM							
NFL00		3:30 AM	4:01 AM	4:17 AM	5:12 AM		6:24 AM	7:02 AM	7:20 AM	8:10 AM		8:28 AM	8:54 AM	9:10 AM	9:34 AM	9:55 AM	no stop	10:43 AM	11:02 AM	11:25 AM
280		4:30 AM	5:01 AM	5:17 AM	6:12 AM		7:24 AM	8:02 AM	8:20 AM	9:10 AM		9:28 AM	9:54 AM	10:10 AM	10:34 AM	10:55 AM	11:09 AM	11:45 AM	no stop	12:25 PM
NFL02		5:30 AM	6:01 AM	6:17 AM	7:12 AM		8:24 AM	9:02 AM	9:20 AM	10:10 AM		10:28 AM	10:54 AM	11:10 AM	11:34 AM	11:55 AM	no stop	12:43 PM	1:02 PM	1:25 PM
290	Rutland										10:30 AM	11:01 AM	11:25 AM	11:40 AM	12:04 PM	12:25 PM	12:39 PM	1:15 PM	no stop	1:55 PM
NFL04		6:30 AM	7:01 AM	7:17 AM	8:12 AM		9:24 AM	10:02 AM	10:20 AM	11:10 AM		11:28 AM	11:54 AM	12:10 PM	12:34 PM	12:55 PM	no stop	1:43 PM	2:02 PM	2:25 PM
262						9:20 AM	10:24 AM	11:02 AM	11:20 AM	12:10 PM		12:28 PM	12:54 PM	1:10 PM	1:34 PM	1:55 PM	2:09 PM	2:45 PM	no stop	3:25 PM
284		8:30 AM	9:01 AM	9:17 AM	10:12 AM		11:24 AM	12:02 PM	12:20 PM	1:10 PM		1:28 PM	1:54 PM	2:10 PM	2:34 PM	2:55 PM	no stop	3:43 PM	4:02 PM	4:25 PM
NFL06		9:30 AM	10:01 AM	10:17 AM	11:12 AM		12:24 PM	1:02 PM	1:20 PM	2:10 PM		2:28 PM	2:54 PM	3:10 PM	3:34 PM	3:55 PM	4:09 PM	4:45 PM	no stop	5:25 PM
246														4:10 PM	4:34 PM	4:55 PM	no stop	no stop	no stop	6:15 PM
48	Chicago			11:03 AM	12:02 PM		1:17 PM	no stop	2:12 PM	no stop		3:21 PM	4:00 PM	4:30 PM	no stop	no stop	no stop	6:00 PM	no stop	6:40 PM
NFL08		11:30 AM	12:01 PM	12:17 PM	1:12 PM		2:24 PM	3:02 PM	3:20 PM	4:10 PM		4:28 PM	4:54 PM	5:10 PM	5:34 PM	5:55 PM	6:09 PM	6:45 PM	no stop	7:25 PM
248													5:40 PM	6:04 PM	6:25 PM	no stop	7:13 PM	7:32 PM	7:55 PM	
294	Cleveland			1:17 PM	2:12 PM		3:24 PM	4:02 PM	4:20 PM	5:10 PM		5:31 PM	5:54 PM	6:10 PM	6:34 PM	6:55 PM	7:09 PM	7:45 PM	no stop	8:25 PM
68	Montreal										5:20 PM	5:51 PM	6:25 PM	6:40 PM	7:04 PM	7:25 PM	7:39 PM	8:15 PM	8:34 PM	8:55 PM
64	Toronto	1:30 PM	2:01 PM	2:17 PM	3:12 PM		4:24 PM	5:02 PM	5:20 PM	6:10 PM		6:31 PM	6:54 PM	7:10 PM	7:34 PM	7:55 PM	8:09 PM	8:45 PM	9:04 PM	9:25 PM
NFL08		2:30 PM	3:01 PM	3:17 PM	4:12 PM		5:24 PM	6:02 PM	6:20 PM	7:10 PM		7:28 PM	7:54 PM	8:10 PM	8:34 PM	8:55 PM	9:09 PM	9:45 PM	10:04 PM	10:25 PM
286		3:30 PM	4:01 PM	4:17 PM	5:12 PM		6:24 PM	7:02 PM	7:20 PM	8:10 PM		8:28 PM	8:54 PM	9:10 PM	9:34 PM	9:55 PM	10:09 PM	10:45 PM	11:04 PM	11:25 PM

110 MPH, WESTBOUND, 2035 PLAN

90 MPH, WESTBOUND, 2035 PLAN

79 MPH, WESTBOUND, 2035 PLAN

[illegible]

10.3 APPENDIX C: Complete Competitive Mode Output Exhibits and Station to Station Matrices

Model Outputs and Adjustment Methodology

The following Exhibits reflect a direct output from the 1080X1080 matrix from which the zones attributed to each of the six major markets (New York City, Albany, Utica, Syracuse, Rochester and Buffalo) were manually agglomerated to obtain the travel data (trips by mode) between each of the major market pairs for existing year 2009, base year 2012, no-build conditions and for the three service plans associated with the maximum operating speed of 79mph, 90mph and 110mph.

Since the model disaggregates the trips by their true destination and true origin, any trip that does not both begin and end within the geographical boundaries of the major markets will not be captured by the model output. Hence this output only shows a fraction of the trips that are taking place between each of the major market pairs and does not reflect the true travel market between the major market pairs.

Exhibits which are a direct output of the 1080X1080 matrix are a subset of the total inter-MPO traffic. This can be attributed to the fact that these charts fail to capture those MPO to MPO trips which actually have an origin, destination or both beyond the exact boundaries of the MPOs being studied. It is important to assign these trips (especially for air, bus and rail mode) to these MPOs to get a true understanding of the competitive travel market between them. Hence, in the Exhibits following those which reflect the direct output of the 1080X1080matrix the MPO to MPO travel modes are modified to reflect the actual on-ground conditions of travel; e.g.: A rail trip originating within the boundaries of New York City and ending at Buffalo, followed by a car trip to the ultimate destination at a point outside the Buffalo MPO would not be accounted for in the charts shown previously. The adjustments and modifications to those charts make sure that such trips are accounted for as they are in reality a part of the competitive travel market.

To make these adjustments the following steps were undertaken:

- A 17X17 (to account for the 17 stations along the corridor) matrix was created for the rail trips. Stations within each of the major markets were agglomerated together (e.g. the Buffalo market comprised of the Buffalo Depew, Buffalo Exchange and the Niagara Falls Station), to calculate the total major market to major market rail trips.
- For the air mode, the first primary adjustment that was done was to assign the trips in and out of Newark Liberty International Airport (EWR) to the New York City market (in the output of the 1080X1080 they did not show up within the New York City market as EWR lies outside the geographical boundaries). Subsequently the following steps were taken: (i) an air trips matrix for 2009 was set up using the data that was collected from various sources at the beginning of the study; (ii) the number of trips between each MPO pair was converted into a fraction which was calculated by dividing the number of trips for that pair by the sum total number of all air trips for that scenario, between each of the MPO pairs. (iii) finally for each scenario the ratios obtained were multiplied by the total sum of all the air trips as calculated from the output of the 1080X1080 matrix for the various scenarios (e.g. 2012, 2018NB, 2018 79mph etc). This is consistent with the logic that the all air trips must pass through the MPO areas and sum total of all the air trips should match the sum total of all air trips between MPOs.
- The adjustments made at this level show a decrease in the total bus ridership. The total number of bus trips output from the 1080X1080 matrix should match the total bus trips occurring between the major MPO pairs as the only bus terminals that have been considered for the study are within the cities associated with each of the major markets. To adjust the bus trips and get a more realistic number reflecting the bus trips between the MPOs whether the true origin and or the true destination lies within the geographical boundaries of the MPOs the same level of adjustment was done for the bus trips and the steps detailed above for the air trips were repeated.

At this juncture it was noticed that the total bus travel numbers were closely matched but some major market to major market numbers (those separated by shorter distance- like Buffalo to Rochester and GBNRTC and Syracuse) were outside the expected trend lines of decreased bus ridership with increased speed of rail operations.

A similar exercise of adjustment could not be undertaken for the car trips as they could not be assigned to any particular node and hence there is no way to ascertain the path that a car trip would take between any two points between the major markets.

Model Outputs from 1080X1080 Matrix

2009 AIR		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	40,297	349	203,731	227,105	410,143	881,624
	CDTC	40,730	0	0	0	0	0	40,730
	HOCTS	349	0	0	0	0	0	349
	SMTC	203,731	0	0	0	0	0	203,731
	GTC	227,105	0	0	0	0	0	227,105
	GBNRTC	410,143	0	0	0	0	0	410,143
	TOTAL	882,058	40,297	349	203,731	227,105	410,143	1,763,681

2009 BUS		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	365,448	130,250	248,156	205,078	391,442	1,340,374
	CDTC	367,239	102	34,103	40,530	37,456	55,910	535,340
	HOCTS	130,250	33,920	0	34,415	16,374	27,135	242,094
	SMTC	248,156	40,530	34,415	0	78,719	151,406	553,227
	GTC	205,078	37,453	16,374	78,719	0	138,297	475,922
	GBNRTC	391,442	55,528	27,135	151,406	138,297	0	763,809
	TOTAL	1,342,165	532,982	242,277	553,226	475,925	764,191	3,910,765

2009 CAR		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	2,019,534	134,243	3,584	25,380	45,129	2,227,869
	CDTC	2,034,748	0	1,176,909	588,846	325,229	261,330	4,387,062
	HOCTS	134,243	1,113,393	0	2,337,782	361,967	209,413	4,156,797
	SMTC	3,584	562,538	2,337,782	0	1,549,870	929,718	5,383,491
	GTC	25,380	315,125	361,967	1,549,870	0	4,559,912	6,812,253
	GBNRTC	45,129	261,534	209,413	929,718	4,559,912	0	6,005,705
	TOTAL	2,243,084	4,272,123	4,220,313	5,409,799	6,822,357	6,005,501	28,973,177

2009 RAIL		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC		274,064	16,905	25,248	20,378	25,084	361,678
	CDTC	275,328		2,038	6,830	8,203	10,974	303,372
	HOCTS	16,905	2,030		781	1,387	2,388	23,491
	SMTC	25,248	6,804	781		1,744	6,165	40,742
	GTC	20,378	8,173	1,387	1,744		1,800	33,481
	GBNRTC	25,084	10,932	2,388	6,165	1,800		46,369
	TOTAL	362,942	302,003	23,498	40,768	33,511	46,411	809,133

2009 ALL MODES		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	2,699,342	281,747	480,719	477,941	871,797	4,811,544
	CDTC	2,718,045	102	1,213,050	636,206	370,887	328,213	5,266,504
	HOCTS	281,747	1,149,343	0	2,372,977	379,728	238,936	4,422,731
	SMTC	480,719	609,872	2,372,977	0	1,630,333	1,087,290	6,181,191
	GTC	477,941	360,751	379,728	1,630,333	0	4,700,009	7,548,761
	GBNRTC	871,797	327,993	238,936	1,087,290	4,700,009	0	7,226,025
	TOTAL	4,830,248	5,147,404	4,486,438	6,207,524	7,558,898	7,226,245	35,456,757

2012 AIR		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	56,184	421	207,389	227,684	412,391	904,069
	CDTC	56,615	0	0	0	0	0	56,615
	HOCTS	421	0	0	0	0	0	421
	SMTC	207,389	0	0	0	0	0	207,389
	GTC	227,684	0	0	0	0	0	227,684
	GBNRTC	412,391	0	0	0	0	0	412,391
	TOTAL	904,500	56,184	421	207,389	227,684	412,391	1,808,569
2012 BUS		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	672,978	155,667	247,761	210,267	409,083	1,695,755
	CDTC	677,718	103	34,591	42,038	37,737	59,946	852,133
	HOCTS	155,667	34,382	0	35,113	16,018	30,131	271,311
	SMTC	247,761	41,980	35,113	0	77,333	168,528	570,715
	GTC	210,267	37,914	16,018	77,333	0	238,421	579,953
	GBNRTC	409,083	59,424	30,131	168,528	238,421	0	905,586
	TOTAL	1,700,496	846,781	271,520	570,772	579,775	906,108	4,875,453
2012 CAR		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	1,727,583	109,576	3,652	24,616	33,436	1,898,863
	CDTC	1,740,795	0	1,195,719	597,250	331,487	261,452	4,126,704
	HOCTS	109,576	1,128,677	0	2,340,261	364,539	207,428	4,150,480
	SMTC	3,652	569,530	2,340,261	0	1,557,332	915,579	5,386,352
	GTC	24,616	320,363	364,539	1,557,332	0	4,491,061	6,757,912
	GBNRTC	33,436	261,246	207,428	915,579	4,491,061	0	5,908,750
	TOTAL	1,912,075	4,007,399	4,217,523	5,414,073	6,769,035	5,908,956	28,229,061
2012 RAIL		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC		275,462	17,518	25,920	20,787	25,399	365,085
	CDTC	276,819		1,990	6,499	7,754	10,557	303,619
	HOCTS	17,518	1,982		776	1,358	2,471	24,105
	SMTC	25,920	6,472	776		1,727	6,345	41,240
	GTC	20,787	7,724	1,358	1,727		2,106	33,702
	GBNRTC	25,399	10,511	2,471	6,345	2,106		46,831
	TOTAL	366,442	302,151	24,113	41,266	33,733	46,878	814,582
2012 ALL MODES		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	2,732,206	283,182	484,722	483,353	880,309	4,863,772
	CDTC	2,751,947	103	1,232,300	645,787	376,978	331,956	5,339,071
	HOCTS	283,182	1,165,041	0	2,376,149	381,916	240,030	4,446,318
	SMTC	484,722	617,982	2,376,149	0	1,636,392	1,090,451	6,205,696
	GTC	483,353	366,002	381,916	1,636,392	0	4,731,588	7,599,250
	GBNRTC	880,309	331,181	240,030	1,090,451	4,731,588	0	7,273,558
	TOTAL	4,883,513	5,212,514	4,513,577	6,233,501	7,610,227	7,274,333	35,727,666

2018 NB AIR		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	44,872	393	211,504	235,551	422,000	914,321
	CDTC	45,413	0	0	0	0	0	45,413
	HOCTS	393	0	0	0	0	0	393
	SMTC	211,504	0	0	0	0	0	211,504
	GTC	235,551	0	0	0	0	0	235,551
	GBNRTC	422,000	0	0	0	0	0	422,000
	TOTAL	914,862	44,872	393	211,504	235,551	422,000	1,829,183

2018 NB BUS		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	612,028	152,437	244,119	214,455	416,972	1,640,011
	CDTC	617,389	103	33,933	40,697	37,364	56,739	786,225
	HOCTS	152,437	33,699	0	34,659	16,124	27,512	264,430
	SMTC	244,119	40,630	34,659	0	77,215	152,811	549,433
	GTC	214,455	37,392	16,124	77,215	0	176,099	521,285
	GBNRTC	416,972	56,259	27,512	152,811	176,099	0	829,652
	TOTAL	1,645,371	780,112	264,664	549,500	521,257	830,132	4,591,036

2018 NB CAR		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	1,888,668	115,458	10,646	25,339	29,175	2,069,286
	CDTC	1,903,333	0	1,236,637	621,579	347,531	272,413	4,381,493
	HOCTS	115,458	1,162,279	0	2,337,745	368,418	210,106	4,194,006
	SMTC	10,646	590,692	2,337,745	0	1,571,987	930,532	5,441,602
	GTC	25,339	334,676	368,418	1,571,987	0	4,610,448	6,910,868
	GBNRTC	29,175	270,909	210,106	930,532	4,610,448	0	6,051,169
	TOTAL	2,083,951	4,247,225	4,268,363	5,472,489	6,923,723	6,052,673	29,048,424

2018 NB RAIL		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC		271,638	17,388	26,469	21,289	25,864	362,648
	CDTC	273,152		1,994	6,625	8,109	10,627	300,507
	HOCTS	17,388	1,985		784	1,413	2,406	23,977
	SMTC	26,469	6,595	784		1,809	6,188	41,845
	GTC	21,289	8,072	1,413	1,809		1,891	34,474
	GBNRTC	25,864	10,576	2,406	6,188	1,891		46,925
	TOTAL	364,163	298,866	23,986	41,876	34,511	46,975	810,377

2018 NB ALL MODES		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	2,817,206	285,677	492,738	496,634	894,011	4,986,266
	CDTC	2,839,287	103	1,272,563	668,902	393,004	339,778	5,513,638
	HOCTS	285,677	1,197,963	0	2,373,188	385,955	240,024	4,482,806
	SMTC	492,738	637,917	2,373,188	0	1,651,011	1,089,531	6,244,385
	GTC	496,634	380,141	385,955	1,651,011	0	4,788,438	7,702,179
	GBNRTC	894,011	337,744	240,024	1,089,531	4,788,438	0	7,349,747
	TOTAL	5,008,347	5,371,075	4,557,406	6,275,369	7,715,042	7,351,781	36,279,020

2018 79 AIR		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	33,268	330	178,721	202,058	357,357	771,734
	CDTC	33,667	0	0	0	0	0	33,667
	HOCTS	330	0	0	0	0	0	330
	SMTC	178,721	0	0	0	0	0	178,721
	GTC	202,058	0	0	0	0	0	202,058
	GBNRTC	357,357	0	0	0	0	0	357,357
	TOTAL	772,133	33,268	330	178,721	202,058	357,357	1,543,867
2018 79 BUS		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	594,713	144,265	228,962	200,590	390,948	1,559,477
	CDTC	599,937	0	33,372	37,839	33,644	49,765	754,558
	HOCTS	144,265	33,138	0	34,569	15,832	26,733	254,537
	SMTC	228,962	37,783	34,569	0	76,892	150,281	528,486
	GTC	200,590	33,688	15,832	76,892	0	175,786	502,788
	GBNRTC	390,948	49,300	26,733	150,281	175,786	0	793,046
	TOTAL	1,564,701	748,621	254,771	528,543	502,744	793,512	4,392,892
2018 79 CAR		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	1,879,028	113,011	10,611	24,893	28,336	2,055,879
	CDTC	1,893,660	0	1,235,152	615,620	342,630	256,882	4,343,944
	HOCTS	113,011	1,160,808	0	2,337,488	367,676	206,787	4,185,769
	SMTC	10,611	584,800	2,337,488	0	1,571,642	926,404	5,430,944
	GTC	24,893	329,858	367,676	1,571,642	0	4,609,392	6,903,460
	GBNRTC	28,336	255,692	206,787	926,404	4,609,392	0	6,026,610
	TOTAL	2,070,510	4,210,187	4,260,114	5,461,764	6,916,232	6,027,800	28,946,606
2018 79 RAIL		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC		310,197	28,071	74,445	69,093	117,370	599,176
	CDTC	312,024		4,038	15,456	16,734	33,975	382,226
	HOCTS	28,071	4,017		1,130	2,447	6,504	42,169
	SMTC	74,445	15,347	1,130		2,478	12,846	106,247
	GTC	69,093	16,599	2,447	2,478		3,270	93,887
	GBNRTC	117,370	33,593	6,504	12,846	3,270		173,585
	TOTAL	601,002	379,754	42,191	106,355	94,022	173,966	1,397,290
2018 79 MPH ALL MODES		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	2,817,206	285,677	492,738	496,634	894,011	4,986,266
	CDTC	2,839,287	0	1,272,563	668,915	393,008	340,622	5,514,395
	HOCTS	285,677	1,197,963	0	2,373,188	385,955	240,024	4,482,806
	SMTC	492,738	637,930	2,373,188	0	1,651,012	1,089,531	6,244,398
	GTC	496,634	380,145	385,955	1,651,012	0	4,788,448	7,702,193
	GBNRTC	894,011	338,585	240,024	1,089,531	4,788,448	0	7,350,598
	TOTAL	5,008,347	5,371,830	4,557,406	6,275,383	7,715,056	7,352,634	36,280,655
2018 90 AIR		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	33,219	316	173,552	194,262	327,271	728,619

CDTC	33,620	0	0	0	0	0	33,620
HOCTS	316	0	0	0	0	0	316
SMTC	173,552	0	0	0	0	0	173,552
GTC	194,262	0	0	0	0	0	194,262
GBNRTC	327,271	0	0	0	0	0	327,271
TOTAL	729,020	33,219	316	173,552	194,262	327,271	1,457,639

**2018 90
BUS**

	NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
NYMTC	0	594,628	143,575	227,440	198,100	381,182	1,544,925
CDTC	599,858	0	33,205	36,930	32,256	46,660	748,909
HOCTS	143,575	32,972	0	34,532	15,691	26,246	253,016
SMTC	227,440	36,876	34,532	0	76,716	148,897	524,462
GTC	198,100	32,306	15,691	76,716	0	175,668	498,481
GBNRTC	381,182	46,206	26,246	148,897	175,668	0	778,198
TOTAL	1,550,155	742,988	253,250	524,515	498,431	778,652	4,347,991

**2018 90
CAR**

	NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
NYMTC	0	1,879,000	112,753	10,608	24,780	27,882	2,055,024
CDTC	1,893,632	0	1,234,665	613,151	339,928	248,028	4,329,404
HOCTS	112,753	1,160,325	0	2,337,381	367,255	204,681	4,182,396
SMTC	10,608	582,362	2,337,381	0	1,571,446	923,895	5,425,693
GTC	24,780	327,204	367,255	1,571,446	0	4,608,951	6,899,636
GBNRTC	27,882	247,090	204,681	923,895	4,608,951	0	6,012,500
TOTAL	2,069,656	4,195,981	4,256,736	5,456,481	6,912,360	6,013,438	28,904,653

**2018 90
RAIL**

	NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
NYMTC		310,359	29,033	81,138	79,492	157,676	657,698
CDTC	312,178		4,693	18,837	20,825	46,175	402,707
HOCTS	29,033	4,667		1,274	3,009	9,097	47,079
SMTC	81,138	18,694	1,274		2,850	16,738	120,695
GTC	79,492	20,636	3,009	2,850		3,834	109,820
GBNRTC	157,676	45,529	9,097	16,738	3,834		232,874
TOTAL	659,516	399,885	47,105	120,837	110,009	233,519	1,570,871

**2018 90
MPH ALL
MODES**

	NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
NYMTC	0	2,817,206	285,677	492,738	496,634	894,011	4,986,266
CDTC	2,839,287	0	1,272,563	668,918	393,009	340,862	5,514,640
HOCTS	285,677	1,197,963	0	2,373,188	385,955	240,024	4,482,806
SMTC	492,738	637,933	2,373,188	0	1,651,012	1,089,531	6,244,401
GTC	496,634	380,146	385,955	1,651,012	0	4,788,452	7,702,199
GBNRTC	894,011	338,825	240,024	1,089,531	4,788,452	0	7,350,842
TOTAL	5,008,347	5,372,073	4,557,406	6,275,386	7,715,062	7,352,880	36,281,153

**2018 110
AIR**

	NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
NYMTC	0	33,191	308	169,750	187,964	305,920	697,132

CDTC	33,593	0	0	0	0	0	33,593
HOCTS	308	0	0	0	0	0	308
SMTc	169,750	0	0	0	0	0	169,750
GTC	187,964	0	0	0	0	0	187,964
GBNRTC	305,920	0	0	0	0	0	305,920
TOTAL	697,534	33,191	308	169,750	187,964	305,920	1,394,667

**2018 110
BUS**

	NYMTC	CDTC	HOCTS	SMTc	GTC	GBNRTC	TOTAL
NYMTC	0	594,566	142,812	225,777	195,525	373,847	1,532,528
CDTC	599,800	0	33,064	36,334	31,233	44,175	744,606
HOCTS	142,812	32,831	0	34,519	15,597	25,827	251,586
SMTc	225,777	36,282	34,519	0	76,561	147,527	520,665
GTC	195,525	31,287	15,597	76,561	0	175,571	494,541
GBNRTC	373,847	43,734	25,827	147,527	175,571	0	766,506
TOTAL	1,537,762	738,700	251,820	520,717	494,487	766,947	4,310,433

**2018 110
CAR**

	NYMTC	CDTC	HOCTS	SMTc	GTC	GBNRTC	TOTAL
NYMTC	0	1,878,970	112,424	10,601	24,623	27,533	2,054,151
CDTC	1,893,602	0	1,234,236	611,363	337,590	240,428	4,317,219
HOCTS	112,424	1,159,899	0	2,337,337	366,942	202,870	4,179,472
SMTc	10,601	580,599	2,337,337	0	1,571,268	921,249	5,421,052
GTC	24,623	324,912	366,942	1,571,268	0	4,608,536	6,896,281
GBNRTC	27,533	239,745	202,870	921,249	4,608,536	0	5,999,933
TOTAL	2,068,783	4,184,125	4,253,808	5,451,817	6,908,959	6,000,616	28,868,108

**2018 110
RAIL**

	NYMTC	CDTC	HOCTS	SMTc	GTC	GBNRTC	TOTAL
NYMTC		310,479	30,133	86,611	88,521	186,710	702,454
CDTC	312,292		5,263	21,223	24,187	56,426	419,390
HOCTS	30,133	5,233		1,332	3,415	11,327	51,440
SMTc	86,611	21,054	1,332		3,183	20,755	132,935
GTC	88,521	23,948	3,415	3,183		4,351	123,418
GBNRTC	186,710	55,511	11,327	20,755	4,351		278,654
TOTAL	704,268	416,225	51,470	133,104	123,657	279,569	1,708,293

**2018 110
MPH ALL
MODES**

	NYMTC	CDTC	HOCTS	SMTc	GTC	GBNRTC	TOTAL
NYMTC	0	2,817,206	285,677	492,738	496,634	894,011	4,986,266
CDTC	2,839,287	0	1,272,563	668,920	393,010	341,029	5,514,809
HOCTS	285,677	1,197,963	0	2,373,188	385,955	240,024	4,482,806
SMTc	492,738	637,935	2,373,188	0	1,651,012	1,089,531	6,244,403
GTC	496,634	380,147	385,955	1,651,012	0	4,788,458	7,702,205
GBNRTC	894,011	338,990	240,024	1,089,531	4,788,458	0	7,351,013
TOTAL	5,008,347	5,372,241	4,557,406	6,275,388	7,715,068	7,353,051	36,281,501

2035 NB AIR

	NYMTC	CDTC	HOCTS	SMTc	GTC	GBNRTC	TOTAL
NYMTC	0	104,963	650	233,725	259,754	444,584	1,043,676

CDTC	105,794	0	0	0	0	0	105,794
HOCTS	650	0	0	0	0	0	650
SMTC	233,725	0	0	0	0	0	233,725
GTC	259,754	0	0	0	0	0	259,754
GBNRTC	444,584	0	0	0	0	0	444,584
TOTAL	1,044,508	104,963	650	233,725	259,754	444,584	2,088,184

2035 NB BUS

	NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
NYMTC	0	971,978	180,616	246,552	239,154	442,690	2,080,990
CDTC	979,712	0	39,837	49,510	47,817	77,662	1,194,537
HOCTS	180,616	39,401	0	36,926	19,259	42,162	318,364
SMTC	246,552	49,039	36,926	0	87,808	244,106	664,431
GTC	239,154	48,183	19,259	87,808	0	565,666	960,069
GBNRTC	442,690	75,966	42,162	244,106	565,666	0	1,370,590
TOTAL	2,088,724	1,184,566	318,800	664,902	959,703	1,372,286	6,588,981

2035 NB CAR

	NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
NYMTC	0	1,750,031	93,703	7,401	15,186	18,474	1,884,795
CDTC	1,768,526	0	1,371,014	691,433	394,314	280,604	4,505,891
HOCTS	93,703	1,274,266	0	2,345,506	381,630	196,889	4,291,993
SMTC	7,401	651,424	2,345,506	0	1,611,572	837,317	5,453,220
GTC	15,186	375,180	381,630	1,611,572	0	4,410,903	6,794,470
GBNRTC	18,474	276,603	196,889	837,317	4,410,903	0	5,740,186
TOTAL	1,903,289	4,327,505	4,388,742	5,493,228	6,813,605	5,744,187	28,670,555

2035 NB RAIL

	NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
NYMTC		278,573	19,312	27,579	23,069	26,319	374,851
CDTC	280,660		1,855	5,663	7,213	9,193	304,583
HOCTS	19,312	1,842		769	1,400	2,737	26,059
SMTC	27,579	5,621	769		4,469	7,882	46,319
GTC	23,069	7,165	1,400	4,469		3,750	39,853
GBNRTC	26,319	9,105	2,737	7,882	3,750		49,792
TOTAL	376,939	302,306	26,072	46,361	39,900	49,880	841,457

**2035 NB ALL
MODES**

	NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
NYMTC	0	3,105,544	294,281	515,256	537,163	932,068	5,384,313
CDTC	3,134,691	0	1,412,706	746,606	449,343	367,459	6,110,805
HOCTS	294,281	1,315,509	0	2,383,200	402,290	241,787	4,637,066
SMTC	515,256	706,085	2,383,200	0	1,703,848	1,089,305	6,397,694
GTC	537,163	430,528	402,290	1,703,848	0	4,980,318	8,054,147
GBNRTC	932,068	361,674	241,787	1,089,305	4,980,318	0	7,605,152
TOTAL	5,413,460	5,919,340	4,734,263	6,438,215	8,072,963	7,610,937	38,189,178

2035 79 AIR

	NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
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NYMTC	0	86,252	527	200,168	223,602	375,905	886,454
CDTC	86,870	0	0	0	0	0	86,870
HOCTS	527	0	0	0	0	0	527
SMTC	200,168	0	0	0	0	0	200,168
GTC	223,602	0	0	0	0	0	223,602
GBNRTC	375,905	0	0	0	0	0	375,905
TOTAL	887,073	86,252	527	200,168	223,602	375,905	1,773,526

2035 79 BUS

	NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
NYMTC	0	938,525	170,927	234,925	225,747	415,335	1,985,459
CDTC	946,108	0	39,345	46,842	43,788	68,459	1,144,542
HOCTS	170,927	38,910	0	36,844	18,922	40,766	306,369
SMTC	234,925	46,384	36,844	0	87,475	240,994	646,622
GTC	225,747	44,188	18,922	87,475	0	565,053	941,385
GBNRTC	415,335	66,874	40,766	240,994	565,053	0	1,329,022
TOTAL	1,993,042	1,134,881	306,804	647,080	940,985	1,330,606	6,353,400

2035 79 CAR

	NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
NYMTC	0	1,744,627	92,416	7,368	14,917	18,141	1,877,470
CDTC	1,763,083	0	1,369,547	685,841	389,744	267,096	4,475,311
HOCTS	92,416	1,272,817	0	2,345,251	380,897	193,588	4,284,969
SMTC	7,368	645,923	2,345,251	0	1,611,213	831,593	5,441,348
GTC	14,917	370,712	380,897	1,611,213	0	4,409,173	6,786,913
GBNRTC	18,141	263,499	193,588	831,593	4,409,173	0	5,715,995
TOTAL	1,895,926	4,297,579	4,381,699	5,481,266	6,805,944	5,719,592	28,582,004

2035 79 RAIL

	NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
NYMTC		336,141	30,410	72,795	72,897	122,687	634,930
CDTC	338,630		3,815	13,930	15,814	32,513	404,701
HOCTS	30,410	3,783		1,105	2,471	7,433	45,201
SMTC	72,795	13,785	1,105		5,160	16,718	109,564
GTC	72,897	15,630	2,471	5,160		6,100	102,258
GBNRTC	122,687	31,907	7,433	16,718	6,100		184,844
TOTAL	637,419	401,244	45,233	109,709	102,442	185,450	1,481,498

**2035 79 MPH
ALL MODES**

	NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
NYMTC	0	3,105,544	294,281	515,256	537,163	932,068	5,384,313
CDTC	3,134,691	0	1,412,706	746,614	449,346	368,067	6,111,424
HOCTS	294,281	1,315,509	0	2,383,200	402,290	241,787	4,637,066
SMTC	515,256	706,092	2,383,200	0	1,703,848	1,089,305	6,397,702
GTC	537,163	430,530	402,290	1,703,848	0	4,980,326	8,054,157
GBNRTC	932,068	362,280	241,787	1,089,305	4,980,326	0	7,605,767
TOTAL	5,413,460	5,919,956	4,734,263	6,438,223	8,072,973	7,611,554	38,190,428

2035 90 AIR

	NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
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NYMTC	0	86,121	500	194,448	214,500	346,127	841,696
CDTC	86,741	0	0	0	0	0	86,741
HOCTS	500	0	0	0	0	0	500
SMTC	194,448	0	0	0	0	0	194,448
GTC	214,500	0	0	0	0	0	214,500
GBNRTC	346,127	0	0	0	0	0	346,127
TOTAL	842,316	86,121	500	194,448	214,500	346,127	1,684,012

2035 90 BUS

	NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
NYMTC	0	938,346	169,705	232,877	222,352	405,150	1,968,430
CDTC	945,934	107	39,189	45,937	42,259	64,171	1,137,596
HOCTS	169,705	38,754	0	36,809	18,756	39,902	303,925
SMTC	232,877	45,484	36,809	0	87,302	239,219	641,690
GTC	222,352	42,673	18,756	87,302	0	564,804	935,887
GBNRTC	405,150	62,673	39,902	239,219	564,804	0	1,311,748
TOTAL	1,976,018	1,128,037	304,360	642,144	935,473	1,313,245	6,299,277

2035 90 CAR

	NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
NYMTC	0	1,744,595	92,222	7,358	14,817	17,912	1,876,903
CDTC	1,763,051	0	1,369,043	683,383	387,042	258,823	4,461,342
HOCTS	92,222	1,272,320	0	2,345,143	380,472	191,362	4,281,519
SMTC	7,358	643,510	2,345,143	0	1,611,020	828,064	5,435,095
GTC	14,817	368,079	380,472	1,611,020	0	4,408,455	6,782,843
GBNRTC	17,912	255,562	191,362	828,064	4,408,455	0	5,701,354
TOTAL	1,895,359	4,284,066	4,378,242	5,474,968	6,801,806	5,704,615	28,539,057

2035 90 RAIL

	NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
NYMTC		336,483	31,854	80,572	85,494	162,879	697,283
CDTC	338,967		4,474	17,295	20,045	45,304	426,084
HOCTS	31,854	4,435		1,248	3,061	10,523	51,123
SMTC	80,572	17,100	1,248		5,527	22,022	126,470
GTC	85,494	19,779	3,061	5,527		7,072	120,932
GBNRTC	162,879	44,273	10,523	22,022	7,072		246,769
TOTAL	699,766	422,070	51,161	126,665	121,199	247,800	1,668,661

**2035 90
MPH ALL
MODES**

	NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
NYMTC	0	3,105,544	294,281	515,256	537,163	932,068	5,384,313
CDTC	3,134,691	107	1,412,706	746,616	449,346	368,297	6,111,763
HOCTS	294,281	1,315,509	0	2,383,200	402,290	241,787	4,637,066
SMTC	515,256	706,095	2,383,200	0	1,703,848	1,089,305	6,397,704
GTC	537,163	430,531	402,290	1,703,848	0	4,980,331	8,054,162
GBNRTC	932,068	362,508	241,787	1,089,305	4,980,331	0	7,605,999
TOTAL	5,413,460	5,920,294	4,734,263	6,438,225	8,072,978	7,611,788	38,191,007

**2035 110
AIR**

	NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
NYMTC	0	86,061	484	190,448	207,437	323,096	807,525
CDTC	86,682	0	0	0	0	0	86,682
HOCTS	484	0	0	0	0	0	484
SMTC	190,448	0	0	0	0	0	190,448
GTC	207,437	0	0	0	0	0	207,437
GBNRTC	323,096	0	0	0	0	0	323,096
TOTAL	808,146	86,061	484	190,448	207,437	323,096	1,615,671

**2035 110
BUS**

	NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
NYMTC	0	938,222	168,789	231,349	219,497	397,200	1,955,057
CDTC	945,814	106	39,059	45,325	41,111	60,697	1,132,111
HOCTS	168,789	38,624	0	36,793	18,639	39,120	301,964
SMTC	231,349	44,875	36,793	0	87,148	237,399	637,565
GTC	219,497	41,535	18,639	87,148	0	564,577	931,397
GBNRTC	397,200	59,290	39,120	237,399	564,577	0	1,297,586
TOTAL	1,962,649	1,122,652	302,399	638,015	930,973	1,298,993	6,255,681

**2035 110
CAR**

	NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
NYMTC	0	1,744,582	92,019	7,349	14,715	17,697	1,876,362
CDTC	1,763,038	0	1,368,605	681,497	384,591	251,429	4,449,160
HOCTS	92,019	1,271,887	0	2,345,089	380,137	189,324	4,278,456
SMTC	7,349	641,661	2,345,089	0	1,610,844	824,253	5,429,197
GTC	14,715	365,696	380,137	1,610,844	0	4,407,737	6,779,129
GBNRTC	17,697	248,522	189,324	824,253	4,407,737	0	5,687,533
TOTAL	1,894,818	4,272,349	4,375,174	5,469,033	6,798,024	5,690,440	28,499,838

**2035 110
RAIL**

	NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
NYMTC		336,680	32,988	86,110	95,514	194,075	745,368
CDTC	339,158		5,043	19,795	23,645	56,339	443,979
HOCTS	32,988	4,998		1,318	3,514	13,343	56,162
SMTC	86,110	19,560	1,318		5,856	27,652	140,496
GTC	95,514	23,300	3,514	5,856		8,021	136,204
GBNRTC	194,075	54,861	13,343	27,652	8,021		297,953
TOTAL	747,846	439,399	56,206	140,731	136,549	299,430	1,820,162

**2035 110
MPH ALL
MODES**

	NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
NYMTC	0	3,105,544	294,281	515,256	537,163	932,068	5,384,313
CDTC	3,134,691	106	1,412,706	746,617	449,347	368,464	6,111,932
HOCTS	294,281	1,315,509	0	2,383,200	402,290	241,787	4,637,066
SMTC	515,256	706,096	2,383,200	0	1,703,848	1,089,305	6,397,705
GTC	537,163	430,531	402,290	1,703,848	0	4,980,335	8,054,167
GBNRTC	932,068	362,674	241,787	1,089,305	4,980,335	0	7,606,169
TOTAL	5,413,460	5,920,460	4,734,263	6,438,227	8,072,983	7,611,959	38,191,352

Adjusted MPO to MPO trips by competitive modes.

2009 AIR		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	55,087	477	278,508	310,462	560,683	1,205,218
	CDTC	55,680	0	0	0	0	0	55,680
	HOCTS	477	0	0	0	0	0	477
	SMTC	278,508	0	0	0	0	0	278,508
	GTC	310,462	0	0	4	0	0	310,467
	GBNRTC	560,683	0	0	0	0	0	560,683
	TOTAL	1,205,811	55,087	477	278,513	310,462	560,683	2,411,033

2009 BUS		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC		405,460	176,212	266,885	217,272	427,700	1,493,528
	CDTC	410,592		49,915	50,775	38,727	68,848	618,857
	HOCTS	176,212	50,775		52,497	23,998	42,169	345,651
	SMTC	302,812	50,775	52,497		92,084	187,611	685,779
	GTC	236,090	51,636	24,097	104,133		159,211	575,167
	GBNRTC	422,568	63,684	36,145	183,209	166,956		872,562
	TOTAL	1,548,274	622,331	338,866	657,498	539,037	885,539	4,591,544

2009 CAR		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	2,019,534	134,243	3,584	25,380	45,129	2,227,869
	CDTC	2,034,748	0	1,176,909	588,846	325,229	261,330	4,387,062
	HOCTS	134,243	1,113,393	0	2,337,782	361,967	209,413	4,156,797
	SMTC	3,584	562,538	2,337,782	0	1,549,870	929,718	5,383,491
	GTC	25,380	315,125	361,967	1,549,870	0	4,559,912	6,812,253
	GBNRTC	45,129	261,534	209,413	929,718	4,559,912	0	6,005,705
	TOTAL	2,243,084	4,272,123	4,220,313	5,409,799	6,822,357	6,005,501	28,973,177

2009 RAIL		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	320,155	19,858	29,787	23,427	29,881	423,108
	CDTC	320,155	0	2,082	7,013	8,224	11,133	348,607
	HOCTS	19,858	2,082	0	819	1,421	2,480	26,659
	SMTC	29,787	7,013	819	0	1,794	6,466	45,878
	GTC	23,427	8,224	1,421	1,794	0	1,862	36,728
	GBNRTC	29,881	11,133	2,480	6,466	1,862	0	51,821
	TOTAL	423,108	348,607	26,659	45,878	36,728	51,821	932,801

2009 ALL MODES		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	2,800,235	330,791	578,764	576,540	1,063,392	5,349,723
	CDTC	2,821,175	0	1,228,906	646,634	372,180	341,310	5,410,206
	HOCTS	330,791	1,166,250	0	2,391,097	387,385	254,062	4,529,585
	SMTC	614,691	620,326	2,391,097	0	1,643,748	1,123,795	6,393,657
	GTC	595,359	374,985	387,485	1,655,800	0	4,720,985	7,734,614
	GBNRTC	1,058,260	336,351	248,038	1,119,393	4,728,730	0	7,490,771
	TOTAL	5,420,276	5,298,147	4,586,315	6,391,688	7,708,584	7,503,544	36,908,555

2012 AIR		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	76,627	575	282,850	310,529	562,444	1,233,024
	CDTC	77,215	0	0	0	0	0	77,215
	HOCTS	575	0	0	0	0	0	575
	SMTC	282,850	0	0	0	0	0	282,850
	GTC	310,529	0	0	4	0	0	310,533
	GBNRTC	562,444	0	0	0	0	0	562,444
	TOTAL	1,233,612	76,627	575	282,854	310,529	562,444	2,466,640
2012 BUS		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	783,641	181,265	288,502	244,843	476,352	1,974,603
	CDTC	789,161	0	40,279	48,950	43,942	69,804	992,137
	HOCTS	181,265	40,035	0	40,887	18,652	35,086	315,925
	SMTC	288,502	48,883	40,887	0	90,050	196,240	664,562
	GTC	244,843	44,149	18,652	90,050	0	277,626	675,320
	GBNRTC	476,352	69,196	35,086	196,240	277,626	0	1,054,500
	TOTAL	904,500	58,197	421	207,423	230,217	416,883	5,677,047
2012 CAR		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	1,727,583	109,576	3,652	24,616	33,436	1,898,863
	CDTC	1,740,795	0	1,195,719	597,250	331,487	261,452	4,126,704
	HOCTS	109,576	1,128,677	0	2,340,261	364,539	207,428	4,150,480
	SMTC	3,652	569,530	2,340,261	0	1,557,332	915,579	5,386,352
	GTC	24,616	320,363	364,539	1,557,332	0	4,491,061	6,757,912
	GBNRTC	33,436	261,246	207,428	915,579	4,491,061	0	5,908,750
	TOTAL	904,500	58,197	421	207,423	230,217	416,883	28,229,061
2012 RAIL		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	321,914	20,527	31,101	26,949	37,951	438,442
	CDTC	321,914	0	2,038	6,690	7,785	10,729	349,156
	HOCTS	20,527	2,038	0	813	1,393	2,566	27,337
	SMTC	31,101	6,690	813	0	1,776	6,659	47,039
	GTC	26,949	7,785	1,393	1,776	0	2,174	40,077
	GBNRTC	37,951	10,729	2,566	6,659	2,174	0	60,080
	TOTAL	904,500	58,197	421	207,423	230,217	416,883	962,131
2012 ALL MODES		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	2,909,765	311,942	606,105	606,937	1,110,183	5,544,932
	CDTC	2,929,085	0	1,238,037	652,890	383,214	341,985	5,545,212
	HOCTS	311,942	1,170,750	0	2,381,960	384,584	245,080	4,494,317
	SMTC	606,105	625,103	2,381,960	0	1,649,157	1,118,478	6,380,804
	GTC	606,937	372,298	384,584	1,649,162	0	4,770,861	7,783,841
	GBNRTC	1,110,183	341,170	245,080	1,118,478	4,770,861	0	7,585,773
	TOTAL	904,500	58,197	421	207,423	230,217	416,883	37,334,879

2018 NB AIR		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	59,424	520	280,095	311,940	558,854	1,210,833
	CDTC	60,140	0	0	0	0	0	60,141
	HOCTS	520	0	0	0	0	0	520
	SMTC	280,095	0	0	0	0	0	280,095
	GTC	311,940	0	0	4	0	0	311,944
	GBNRTC	558,854	0	0	0	0	0	558,854
	TOTAL	1,211,550	59,424	520	280,099	311,940	558,854	2,422,387

2018 NB BUS		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	715,557	178,223	285,413	250,732	487,505	1,917,430
	CDTC	721,824	121	39,673	47,581	43,684	66,336	919,220
	HOCTS	178,223	39,399	0	40,522	18,852	32,165	309,161
	SMTC	285,413	47,503	40,522	0	90,276	178,660	642,373
	GTC	250,732	43,718	18,852	90,276	0	205,888	609,465
	GBNRTC	487,505	65,776	32,165	178,660	205,888	0	969,994
	TOTAL	914,862	46,950	393	211,540	238,231	426,701	5,367,642

2018 NB CAR		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	1,888,668	115,458	10,646	25,339	29,175	2,069,286
	CDTC	1,903,333	0	1,236,637	621,579	347,531	272,413	4,381,493
	HOCTS	115,458	1,162,279	0	2,337,745	368,418	210,106	4,194,006
	SMTC	10,646	590,692	2,337,745	0	1,571,987	930,532	5,441,602
	GTC	25,339	334,676	368,418	1,571,987	0	4,610,448	6,910,868
	GBNRTC	29,175	270,909	210,106	930,532	4,610,448	0	6,051,169
	TOTAL	914,862	46,950	393	211,540	238,231	426,701	29,048,424

2018 NB RAIL		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	317,570	20,368	31,352	36,767	60,145	466,201
	CDTC	317,570	0	2,041	6,814	8,133	10,784	345,341
	HOCTS	20,368	2,041	0	822	1,448	2,498	27,177
	SMTC	31,352	6,814	822	0	1,860	6,490	47,337
	GTC	36,767	8,133	1,447	1,860	0	1,955	50,162
	GBNRTC	60,145	10,784	2,498	6,490	1,955	0	81,872
	TOTAL	914,862	46,950	393	211,540	238,231	426,701	1,018,089

2018 NB ALL MODES		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	2,981,219	314,569	607,506	624,777	1,135,679	5,663,750
	CDTC	3,002,867	121	1,278,351	675,974	399,349	349,533	5,706,195
	HOCTS	314,569	1,203,719	0	2,379,088	388,717	244,769	4,530,863
	SMTC	607,506	645,008	2,379,088	0	1,664,123	1,115,681	6,411,407
	GTC	624,777	386,527	388,717	1,664,128	0	4,818,290	7,882,438
	GBNRTC	1,135,679	347,468	244,769	1,115,681	4,818,290	0	7,661,889
	TOTAL	914,862	46,950	393	211,540	238,231	426,701	37,856,543

2018 79 AIR		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	44,349	440	238,251	269,362	476,389	1,028,791
	CDTC	44,881	0	0	0	0	0	44,881
	HOCTS	440	0	0	0	0	0	440
	SMTC	238,251	0	0	0	0	0	238,251
	GTC	269,362	0	0	4	0	0	269,366
	GBNRTC	476,389	0	0	0	0	0	476,389
	TOTAL	1,029,323	44,349	440	238,255	269,362	476,389	2,058,118

2018 79 BUS		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	698,535	169,450	268,933	235,608	459,198	1,831,724
	CDTC	704,671	0	39,198	44,445	39,517	58,453	886,285
	HOCTS	169,450	38,924	0	40,604	18,596	31,400	298,973
	SMTC	268,933	44,379	40,604	0	90,315	176,516	620,747
	GTC	235,608	39,569	18,596	90,315	0	206,473	590,562
	GBNRTC	459,198	57,906	31,400	176,516	206,473	0	931,493
	TOTAL	772,133	34,488	330	178,744	204,724	361,204	5,159,785

2018 79 CAR		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	1,879,028	113,011	10,611	24,893	28,336	2,055,879
	CDTC	1,893,660	0	1,235,152	615,620	342,630	256,882	4,343,944
	HOCTS	113,011	1,160,808	0	2,337,488	367,676	206,787	4,185,769
	SMTC	10,611	584,800	2,337,488	0	1,571,642	926,404	5,430,944
	GTC	24,893	329,858	367,676	1,571,642	0	4,609,392	6,903,460
	GBNRTC	28,336	255,692	206,787	926,404	4,609,392	0	6,026,610
	TOTAL	772,133	34,488	330	178,744	204,724	361,204	28,946,606

2018 79 RAIL		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	367,100	31,778	93,802	92,778	159,794	745,251
	CDTC	367,100	0	4,144	16,020	16,865	34,558	438,686
	HOCTS	31,778	4,144	0	1,181	2,514	6,812	46,428
	SMTC	93,802	16,020	1,181	0	2,544	13,579	127,126
	GTC	92,778	16,865	2,514	2,544	0	3,428	118,128
	GBNRTC	159,794	34,558	6,812	13,579	3,428	0	218,171
	TOTAL	772,133	34,488	330	178,744	204,724	361,204	1,693,791

2018 79 MPH ALL MODES		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	2,989,012	314,678	611,597	622,641	1,123,716	5,661,645
	CDTC	3,010,312	0	1,278,495	676,085	399,012	349,893	5,713,797
	HOCTS	314,678	1,203,876	0	2,379,273	388,786	244,998	4,531,611
	SMTC	611,597	645,199	2,379,273	0	1,664,501	1,116,499	6,417,069
	GTC	622,641	386,292	388,786	1,664,505	0	4,819,293	7,881,516
	GBNRTC	1,123,716	348,156	244,998	1,116,499	4,819,293	0	7,652,663
	TOTAL	772,133	34,488	330	178,744	204,724	361,204	37,858,300

2018 90 AIR		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	44,781	426	233,955	261,873	441,176	982,210
	CDTC	45,321	0	0	0	0	0	45,321
	HOCTS	426	0	0	0	0	0	426
	SMTC	233,955	0	0	0	0	0	233,955
	GTC	261,873	0	0	4	0	0	261,877
	GBNRTC	441,176	0	0	0	0	0	441,176
	TOTAL	982,750	44,781	426	233,959	261,873	441,176	1,964,965

2018 90 BUS		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	699,209	168,827	267,441	232,941	448,222	1,816,640
	CDTC	705,359	0	39,046	43,425	37,929	54,866	880,625
	HOCTS	168,827	38,771	0	40,606	18,451	30,861	297,515
	SMTC	267,441	43,362	40,606	0	90,209	175,084	616,702
	GTC	232,941	37,988	18,451	90,209	0	206,563	586,152
	GBNRTC	448,222	54,333	30,861	175,084	206,563	0	915,064
	TOTAL	729,020	34,195	316	173,571	196,922	330,873	5,112,698

2018 90 CAR		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	1,879,000	112,753	10,608	24,780	27,882	2,055,024
	CDTC	1,893,632	0	1,234,665	613,151	339,928	248,028	4,329,404
	HOCTS	112,753	1,160,325	0	2,337,381	367,255	204,681	4,182,396
	SMTC	10,608	582,362	2,337,381	0	1,571,446	923,895	5,425,693
	GTC	24,780	327,204	367,255	1,571,446	0	4,608,951	6,899,636
	GBNRTC	27,882	247,090	204,681	923,895	4,608,951	0	6,012,500
	TOTAL	729,020	34,195	316	173,571	196,922	330,873	28,904,653

2018 90 RAIL		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	367,268	32,838	102,119	104,482	201,013	807,720
	CDTC	367,268	0	4,817	19,560	21,013	47,003	459,660
	HOCTS	32,838	4,817	0	1,331	3,097	9,534	51,618
	SMTC	102,119	19,560	1,331	0	2,927	17,693	143,630
	GTC	104,482	21,013	3,097	2,927	0	4,020	135,538
	GBNRTC	201,013	47,003	9,534	17,693	4,020	0	279,263
	TOTAL	729,020	34,195	316	173,571	196,922	330,873	1,877,430

2018 90 MPH ALL MODES		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	2,990,257	314,844	614,124	624,077	1,118,293	5,661,595
	CDTC	3,011,579	0	1,278,528	676,136	398,870	349,897	5,715,010
	HOCTS	314,844	1,203,913	0	2,379,318	388,803	245,077	4,531,954
	SMTC	614,124	645,284	2,379,318	0	1,664,581	1,116,673	6,419,980
	GTC	624,077	386,205	388,803	1,664,585	0	4,819,534	7,883,204
	GBNRTC	1,118,293	348,425	245,077	1,116,673	4,819,534	0	7,648,003
	TOTAL	729,020	34,195	316	173,571	196,922	330,873	37,859,746

2018 110 AIR		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	45,162	419	230,976	255,760	416,261	948,578
	CDTC	45,709	0	0	0	0	0	45,709
	HOCTS	419	0	0	0	0	0	419
	SMTC	230,976	0	0	0	0	0	230,976
	GTC	255,760	0	0	4	0	0	255,765
	GBNRTC	416,261	0	0	0	0	0	416,261
	TOTAL	949,125	45,162	419	230,980	255,760	416,261	1,897,707

2018 110 BUS		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	699,782	168,085	265,731	230,126	440,004	1,803,727
	CDTC	705,942	0	38,916	42,763	36,760	51,992	876,373
	HOCTS	168,085	38,640	0	40,628	18,357	30,397	296,107
	SMTC	265,731	42,702	40,628	0	90,109	173,633	612,804
	GTC	230,126	36,824	18,357	90,109	0	206,640	582,056
	GBNRTC	440,004	51,473	30,397	173,633	206,640	0	902,148
	TOTAL	697,534	33,999	308	169,767	190,619	309,350	5,073,216

2018 110 CAR		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	1,878,970	112,424	10,601	24,623	27,533	2,054,151
	CDTC	1,893,602	0	1,234,236	611,363	337,590	240,428	4,317,219
	HOCTS	112,424	1,159,899	0	2,337,337	366,942	202,870	4,179,472
	SMTC	10,601	580,599	2,337,337	0	1,571,268	921,249	5,421,052
	GTC	24,623	324,912	366,942	1,571,268	0	4,608,536	6,896,281
	GBNRTC	27,533	239,745	202,870	921,249	4,608,536	0	5,999,933
	TOTAL	697,534	33,999	308	169,767	190,619	309,350	28,868,108

2018 110 RAIL		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	367,391	34,028	108,669	114,396	230,674	855,157
	CDTC	367,391	0	5,406	22,064	24,432	57,478	476,770
	HOCTS	34,028	5,406	0	1,391	3,516	11,876	56,216
	SMTC	108,669	22,064	1,391	0	3,269	21,928	157,321
	GTC	114,396	24,432	3,515	3,269	0	4,556	150,168
	GBNRTC	230,674	57,478	11,876	21,928	4,556	0	326,512
	TOTAL	697,534	33,999	308	169,767	190,619	309,350	2,022,145
2018 110 MPH ALL MODES		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	2,991,305	314,954	615,977	624,905	1,114,472	5,661,613
	CDTC	3,012,644	0	1,278,557	676,191	398,782	349,899	5,716,072
	HOCTS	314,954	1,203,946	0	2,379,355	388,815	245,143	4,532,214
	SMTC	615,977	645,365	2,379,355	0	1,664,646	1,116,810	6,422,153
	GTC	624,905	386,167	388,815	1,664,650	0	4,819,733	7,884,270
	GBNRTC	1,114,472	348,697	245,143	1,116,810	4,819,733	0	7,644,854
	TOTAL	697,534	33,999	308	169,767	190,619	309,350	37,861,177

2035 NB AIR		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	135,794	841	302,379	336,055	575,177	1,350,247
	CDTC	136,870	0	0	0	0	0	136,870
	HOCTS	841	0	0	0	0	0	841
	SMTC	302,379	0	0	0	0	0	302,379
	GTC	336,055	0	0	4	0	0	336,059
	GBNRTC	575,177	0	0	0	0	0	575,177
	TOTAL	1,351,323	135,795	841	302,383	336,055	575,177	2,701,574

2035 NB BUS		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	1,150,454	213,781	291,824	283,068	523,978	2,463,105
	CDTC	1,159,609	0	47,152	58,601	56,597	91,922	1,413,880
	HOCTS	213,781	46,636	0	43,706	22,796	49,903	376,823
	SMTC	291,824	58,044	43,706	0	103,931	288,930	786,435
	GTC	283,068	57,030	22,796	103,931	0	669,534	1,136,359
	GBNRTC	523,978	89,915	49,903	288,930	669,534	0	1,622,260
	TOTAL	1,044,508	107,533	650	233,751	262,295	449,674	7,798,863

2035 NB CAR		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	1,750,031	93,703	7,401	15,186	18,474	1,884,795
	CDTC	1,768,526	0	1,371,014	691,433	394,314	280,604	4,505,891
	HOCTS	93,703	1,274,266	0	2,345,506	381,630	196,889	4,291,993
	SMTC	7,401	651,424	2,345,506	0	1,611,572	837,317	5,453,220
	GTC	15,186	375,180	381,630	1,611,572	0	4,410,903	6,794,470
	GBNRTC	18,474	276,603	196,889	837,317	4,410,903	0	5,740,186
	TOTAL	1,044,508	107,533	650	233,751	262,295	449,674	28,670,555

2035 NB RAIL		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	338,627	22,414	32,425	38,833	59,707	492,005
	CDTC	338,627	0	1,901	5,835	7,233	9,347	362,944
	HOCTS	22,414	1,901	0	807	1,438	2,857	29,416
	SMTC	32,425	5,835	807	0	4,637	8,273	51,976
	GTC	38,833	7,233	1,437	4,637	0	4,511	56,650
	GBNRTC	59,707	9,347	2,857	8,273	4,511	0	84,694
	TOTAL	1,044,508	107,533	650	233,751	262,295	449,674	1,077,685

2035 NB ALL MODES		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	3,374,907	330,738	634,030	673,141	1,177,336	6,190,152
	CDTC	3,403,631	0	1,420,067	755,869	458,144	381,874	6,419,586
	HOCTS	330,738	1,322,803	0	2,390,018	405,864	249,649	4,699,073
	SMTC	634,030	715,303	2,390,018	0	1,720,139	1,134,519	6,594,010
	GTC	673,141	439,443	405,864	1,720,143	0	5,084,948	8,323,539
	GBNRTC	1,177,336	375,866	249,649	1,134,519	5,084,948	0	8,022,318
	TOTAL	1,044,508	107,533	650	233,751	262,295	449,674	40,248,677

2035 79 AIR		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	112,172	685	260,322	290,798	488,872	1,152,848
	CDTC	112,977	0	0	0	0	0	112,977
	HOCTS	685	0	0	0	0	0	685
	SMTC	260,322	0	0	0	0	0	260,322
	GTC	290,798	0	0	4	0	0	290,802
	GBNRTC	488,872	0	0	0	0	0	488,872
	TOTAL	1,153,653	112,172	685	260,326	290,798	488,872	2,306,506

2035 79 BUS		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	1,115,442	203,148	279,210	268,302	493,628	2,359,729
	CDTC	1,124,454	0	46,762	55,673	52,043	81,363	1,360,295
	HOCTS	203,148	46,244	0	43,789	22,489	48,450	364,121
	SMTC	279,210	55,128	43,789	0	103,965	286,423	768,514
	GTC	268,302	52,518	22,489	103,965	0	671,568	1,118,841
	GBNRTC	493,628	79,480	48,450	286,423	671,568	0	1,579,550
	TOTAL	887,073	88,206	527	200,187	226,132	380,379	7,551,050

2035 79 CAR		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	1,744,627	92,416	7,368	14,917	18,141	1,877,470
	CDTC	1,763,083	0	1,369,547	685,841	389,744	267,096	4,475,311
	HOCTS	92,416	1,272,817	0	2,345,251	380,897	193,588	4,284,969
	SMTC	7,368	645,923	2,345,251	0	1,611,213	831,593	5,441,348
	GTC	14,917	370,712	380,897	1,611,213	0	4,409,173	6,786,913
	GBNRTC	18,141	263,499	193,588	831,593	4,409,173	0	5,715,995
	TOTAL	887,073	88,206	527	200,187	226,132	380,379	28,582,004

2035 79 RAIL		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	408,510	34,232	91,692	96,535	164,461	795,430
	CDTC	408,510	0	3,919	14,454	15,935	33,144	475,962
	HOCTS	34,232	3,919	0	1,156	2,543	7,818	49,669
	SMTC	91,692	14,454	1,156	0	5,347	17,643	130,292
	GTC	96,535	15,935	2,543	5,347	0	6,957	127,317
	GBNRTC	164,461	33,144	7,818	17,643	6,957	0	230,023
	TOTAL	887,073	88,206	527	200,187	226,132	380,379	1,808,692

2035 79 MPH ALL MODES		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	3,380,751	330,482	638,591	670,552	1,165,101	6,185,477
	CDTC	3,409,024	0	1,420,227	755,968	457,721	381,603	6,424,544
	HOCTS	330,482	1,322,980	0	2,390,196	405,929	249,856	4,699,444
	SMTC	638,591	715,506	2,390,196	0	1,720,524	1,135,659	6,600,476
	GTC	670,552	439,165	405,929	1,720,528	0	5,087,699	8,323,872
	GBNRTC	1,165,101	376,124	249,856	1,135,659	5,087,699	0	8,014,439
	TOTAL	887,073	88,206	527	200,187	226,132	380,379	40,248,252

2035 90 AIR		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	113,005	655	255,148	281,459	454,175	1,104,442
	CDTC	113,818	0	0	0	0	0	113,818
	HOCTS	655	0	0	0	0	0	655
	SMTC	255,148	0	0	0	0	0	255,148
	GTC	281,459	0	0	4	0	0	281,463
	GBNRTC	454,175	0	0	0	0	0	454,175
2035 90 BUS	TOTAL	1,105,255	113,005	655	255,152	281,459	454,175	2,209,701
		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	1,116,350	201,898	277,054	264,532	482,007	2,341,842
	CDTC	1,125,377	127	46,623	54,652	50,276	76,344	1,353,398
	HOCTS	201,898	46,105	0	43,791	22,314	47,471	361,580
	SMTC	277,054	54,112	43,791	0	103,863	284,599	763,419
	GTC	264,532	50,768	22,314	103,863	0	671,947	1,113,424
2035 90 CAR	GBNRTC	482,007	74,562	47,471	284,599	671,947	0	1,560,586
	TOTAL	842,316	87,844	500	194,465	217,026	350,367	7,494,250
		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	1,744,595	92,222	7,358	14,817	17,912	1,876,903
	CDTC	1,763,051	0	1,369,043	683,383	387,042	258,823	4,461,342
	HOCTS	92,222	1,272,320	0	2,345,143	380,472	191,362	4,281,519
	SMTC	7,358	643,510	2,345,143	0	1,611,020	828,064	5,435,095
2035 90 RAIL	GTC	14,817	368,079	380,472	1,611,020	0	4,408,455	6,782,843
	GBNRTC	17,912	255,562	191,362	828,064	4,408,455	0	5,701,354
	TOTAL	842,316	87,844	500	194,465	217,026	350,367	28,539,057
		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	408,881	35,799	101,207	110,559	205,556	862,002
	CDTC	408,881	0	4,598	17,979	20,220	46,212	497,890
	HOCTS	35,799	4,598	0	1,306	3,156	11,076	55,934
2035 90 MPH ALL MODES	SMTC	101,207	17,979	1,306	0	5,723	23,235	149,449
	GTC	110,559	20,220	3,156	5,723	0	7,959	147,617
	GBNRTC	205,556	46,212	11,076	23,235	7,959	0	294,037
	TOTAL	842,316	87,844	500	194,465	217,026	350,367	2,006,928
		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	3,382,830	330,574	640,767	671,367	1,159,650	6,185,189
	CDTC	3,411,127	127	1,420,264	756,014	457,538	381,379	6,426,448
2035 90 MPH ALL MODES	HOCTS	330,574	1,323,023	0	2,390,240	405,943	249,908	4,699,688
	SMTC	640,767	715,602	2,390,240	0	1,720,605	1,135,897	6,603,111
	GTC	671,367	439,067	405,943	1,720,609	0	5,088,361	8,325,347
	GBNRTC	1,159,650	376,336	249,908	1,135,897	5,088,361	0	8,010,153
	TOTAL	842,316	87,844	500	194,465	217,026	350,367	40,249,936

2035 110 AIR		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	113,822	640	251,883	274,352	427,321	1,068,018
	CDTC	114,644	0	0	0	0	0	114,644
	HOCTS	640	0	0	0	0	0	640
	SMTC	251,883	0	0	0	0	0	251,883
	GTC	274,352	0	0	4	0	0	274,356
	GBNRTC	427,321	0	0	0	0	0	427,321
	TOTAL	1,068,839	113,822	640	251,887	274,352	427,321	2,136,861

2035 110 BUS		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	1,117,118	200,973	275,462	261,350	472,936	2,327,839
	CDTC	1,126,157	126	46,506	53,967	48,950	72,270	1,347,976
	HOCTS	200,973	45,988	0	43,808	22,193	46,579	359,542
	SMTC	275,462	53,431	43,808	0	103,766	282,666	759,133
	GTC	261,350	49,455	22,193	103,766	0	672,228	1,108,992
	GBNRTC	472,936	70,595	46,579	282,666	672,228	0	1,545,004
	TOTAL	808,146	87,617	484	190,463	209,980	327,164	7,448,486

2035 110 CAR		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	1,744,582	92,019	7,349	14,715	17,697	1,876,362
	CDTC	1,763,038	0	1,368,605	681,497	384,591	251,429	4,449,160
	HOCTS	92,019	1,271,887	0	2,345,089	380,137	189,324	4,278,456
	SMTC	7,349	641,661	2,345,089	0	1,610,844	824,253	5,429,197
	GTC	14,715	365,696	380,137	1,610,844	0	4,407,737	6,779,129
	GBNRTC	17,697	248,522	189,324	824,253	4,407,737	0	5,687,533
	TOTAL	808,146	87,617	484	190,463	209,980	327,164	28,499,838

2035 110 RAIL		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	409,082	37,021	107,785	121,555	237,431	912,874
	CDTC	409,082	0	5,185	20,604	23,876	57,504	516,250
	HOCTS	37,021	5,185	0	1,378	3,626	14,047	61,257
	SMTC	107,785	20,604	1,378	0	6,059	29,154	164,980
	GTC	121,555	23,876	3,625	6,059	0	8,928	164,043
	GBNRTC	237,431	57,504	14,047	29,154	8,928	0	347,065
	TOTAL	808,146	87,617	484	190,463	209,980	327,164	2,166,469

2035 110 MPH ALL MODES		NYMTC	CDTC	HOCTS	SMTC	GTC	GBNRTC	TOTAL
	NYMTC	0	3,384,604	330,653	642,478	671,972	1,155,385	6,185,092
	CDTC	3,412,920	126	1,420,296	756,069	457,416	381,203	6,428,030
	HOCTS	330,653	1,323,060	0	2,390,276	405,955	249,950	4,699,895
	SMTC	642,478	715,697	2,390,276	0	1,720,669	1,136,073	6,605,193
	GTC	671,972	439,027	405,955	1,720,673	0	5,088,893	8,326,520
	GBNRTC	1,155,385	376,622	249,950	1,136,073	5,088,893	0	8,006,923
	TOTAL	808,146	87,617	484	190,463	209,980	327,164	40,251,654

Station to Station Rail Trips – 2009 and 2012

2009

Stations	NYP	YNY	CRT	POU	RHI	HUD	ALB	SDY	AMS	UCA	ROM	SYR	ROC	BUF	BFX	NFL	SAR	Grand Total
NYP		573	4,490	15,536	68,675	65,322	285,163	11,873	2,298	16,494	2,232	27,607	21,246	14,816	5,491	7,383	12,280	561,480
YNY	573		7	33	224	541	3,915	286	51	311	58	591	703	384	184	144	263	8,268
CRT	4,490	7		70	814	877	5,478	484	64	673	90	1,589	1,478	1,000	291	187	413	18,006
POU	15,536	33	70		213	757	6,674	535	66	635	106	1,819	1,977	1,505	602	254	280	31,061
RHI	68,675	224	814	213		135	1,096	68	6	108	27	366	522	279	119	63	101	72,817
HUD	65,322	541	877	757	135		1,375	179	51	105	19	256	268	216	91	60	82	70,334
ALB	285,163	3,915	5,478	6,674	1,096	1,375		220	47	1,310	179	5,354	6,105	6,380	1,406	789	223	325,714
SDY	11,873	286	484	535	68	179	220		15	463	129	1,659	2,119	1,838	471	249	253	20,843
AMS	2,298	51	64	66	6	51	47	15		41	10	237	362	365	100	42	0	3,756
UCA	16,494	311	673	635	108	105	1,310	463	41		54	653	1,162	1,285	538	190	0	24,022
ROM	2,232	58	90	106	27	19	179	129	10	54		166	259	287	117	62	0	3,795
SYR	27,607	591	1,589	1,819	366	256	5,354	1,659	237	653	166		1,794	3,976	1,518	972	0	48,558
ROC	21,246	703	1,478	1,977	522	268	6,105	2,119	362	1,162	259	1,794		927	515	420	0	39,857
BUF	14,816	384	1,000	1,505	279	216	6,380	1,838	365	1,285	287	3,976	927		32	326	0	33,615
BFX	5,491	184	291	602	119	91	1,406	471	100	538	117	1,518	515	32		36	0	11,512
NFL	7,383	144	187	254	63	60	789	249	42	190	62	972	420	326	36		0	11,178
SAR	12,280	263	413	280	101	82	223	253	0	0	0	0	0	0	0	0		13,893
Grand Total	561,480	8,268	18,006	31,061	72,817	70,334	325,714	20,843	3,756	24,022	3,795	48,558	39,857	33,615	11,512	11,178	13,893	1,298,707

2012 NO BUILD

Stations	NYP	YNY	CRT	POU	RHI	HUD	ALB	SDY	AMS	UCA	ROM	SYR	ROC	BUF	BFX	NFL	SAR	Grand Total
NYP		583	4,533	16,843	73,519	67,522	283,682	12,619	2,456	17,018	2,295	28,882	24,745	18,152	8,739	8,854	14,732	585,175
YNY	583		7	34	233	549	3,967	298	53	370	78	631	721	390	191	147	286	8,538
CRT	4,533	7		72	832	881	5,393	495	65	676	90	1,588	1,483	999	292	187	443	18,035
POU	16,843	34	72		222	777	6,754	563	68	655	109	1,865	2,028	1,545	703	261	313	32,813
RHI	73,519	233	832	222		138	1,101	70	6	110	28	374	533	285	132	64	111	77,759
HUD	67,522	549	881	777	138		1,358	183	52	106	19	258	270	217	121	60	87	72,597
ALB	283,682	3,967	5,393	6,754	1,101	1,358		228	49	1,274	176	5,099	5,763	6,086	1,444	773	236	323,384
SDY	12,619	298	495	563	70	183	228		15	459	130	1,591	2,023	1,734	444	249	268	21,367
AMS	2,456	53	65	68	6	52	49	15		41	10	238	362	365	125	42	0	3,949
UCA	17,018	370	676	655	110	106	1,274	459	41		54	648	1,136	1,263	604	190	0	24,603
ROM	2,295	78	90	109	28	19	176	130	10	54		165	257	284	162	62	0	3,919
SYR	28,882	631	1,588	1,865	374	258	5,099	1,591	238	648	165		1,776	3,792	1,898	970	0	49,774
ROC	24,745	721	1,483	2,028	533	270	5,763	2,023	362	1,136	257	1,776		994	735	445	0	43,270
BUF	18,152	390	999	1,545	285	217	6,086	1,734	365	1,263	284	3,792	994		32	327	0	36,464
BFX	8,739	191	292	703	132	121	1,444	444	125	604	162	1,898	735	32		36	0	15,656
NFL	8,854	147	187	261	64	60	773	249	42	190	62	970	445	327	36		0	12,668
SAR	14,732	286	443	313	111	87	236	268	0	0	0	0	0	0	0	0		16,476
Grand Total	585,174	8,538	18,035	32,813	77,759	72,597	323,384	21,367	3,949	24,603	3,919	49,774	43,270	36,464	15,656	12,668	16,476	1,346,446

Station to Station Rail Trips – 2018 No Build and 2018 79MPH**2018 NO BUILD**

Stations	NYP	YNY	CRT	POU	RHI	HUD	ALB	SDY	AMS	UCA	ROM	SYR	ROC	BUF	BFX	NFL	SAR	Grand Total
NYP		599	4,621	17,034	74,619	68,759	279,405	12,295	2,427	16,922	2,286	29,216	34,513	34,568	13,037	10,317	15,012	615,630
YNY	599		8	37	247	576	3,884	302	55	323	59	552	739	398	192	149	337	8,456
CRT	4,621	8		76	881	918	5,313	503	68	686	91	1,583	1,515	1,005	293	188	520	18,268
POU	17,034	37	76		244	842	6,964	595	73	693	115	1,970	2,170	1,626	664	276	399	33,780
RHI	74,619	247	881	244		149	1,120	73	7	116	29	392	564	296	128	67	137	79,069
HUD	68,759	576	918	842	149		1,366	188	55	110	20	269	284	225	99	62	102	74,024
ALB	279,405	3,884	5,313	6,964	1,120	1,366		223	49	1,270	173	5,151	5,952	6,097	1,369	758	261	319,356
SDY	12,295	302	503	595	73	188	223		16	468	130	1,663	2,181	1,834	476	250	300	21,496
AMS	2,427	55	68	73	7	55	49	16		42	10	243	377	373	106	43	0	3,944
UCA	16,922	323	686	693	116	110	1,270	468	42		54	656	1,184	1,287	551	190	0	24,553
ROM	2,286	59	91	115	29	20	173	130	10	54		166	263	286	122	62	0	3,866
SYR	29,216	552	1,583	1,970	392	269	5,151	1,663	243	656	166		1,860	3,956	1,565	969	0	50,211
ROC	34,513	739	1,515	2,170	564	284	5,952	2,181	377	1,184	263	1,860		965	554	435	0	53,556
BUF	34,568	398	1,005	1,626	296	225	6,097	1,834	373	1,287	286	3,956	965		32	324	0	53,272
BFX	13,037	192	293	664	128	99	1,369	476	106	551	122	1,565	554	32		36	0	19,223
NFL	10,317	149	188	276	67	62	758	250	43	190	62	969	435	324	36		0	14,128
SAR	15,012	337	520	399	137	102	261	300	0	0	0	0	0	0	0	0		17,067
Grand Total	615,630	8,456	18,268	33,780	79,069	74,024	319,356	21,496	3,944	24,553	3,866	50,211	53,556	53,272	19,223	14,128	17,067	1,409,899

2018 79MPH

Stations	NYP	YNY	CRT	POU	RHI	HUD	ALB	SDY	AMS	UCA	ROM	SYR	ROC	BUF	BFX	NFL	SAR	Grand Total
NYP		599	4,621	17,100	75,165	69,379	304,981	19,228	3,413	21,639	4,510	81,130	78,788	77,998	32,397	26,143	20,865	837,956
YNY	599		8	38	271	621	7,581	1,153	154	2,002	432	6,125	8,160	6,605	3,599	4,107	1,390	42,844
CRT	4,621	8		76	960	965	8,574	1,542	225	2,652	543	6,547	5,830	3,904	2,597	2,444	1,786	43,274
POU	17,100	38	76		245	869	10,116	1,496	196	1,922	409	5,111	4,616	2,459	1,438	1,343	1,329	48,764
RHI	75,165	271	960	245		150	1,462	204	26	435	126	1,396	1,294	314	221	309	356	82,933
HUD	69,379	621	965	869	150		1,438	412	165	412	76	1,233	1,030	832	587	724	139	79,032
ALB	304,981	7,581	8,574	10,116	1,462	1,438		308	82	2,735	468	12,826	12,824	15,873	5,541	6,474	294	391,576
SDY	19,228	1,153	1,542	1,496	204	412	308		17	717	224	3,194	4,041	3,791	1,509	1,370	300	39,507
AMS	3,413	154	225	196	26	165	82	17		59	17	445	674	888	270	274	0	6,905
UCA	21,639	2,002	2,652	1,922	435	412	2,735	717	59		54	958	2,041	2,896	1,411	1,128	0	41,062
ROM	4,510	432	543	409	126	76	468	224	17	54		222	473	698	344	334	0	8,930
SYR	81,130	6,125	6,547	5,112	1,396	1,233	12,826	3,194	445	958	222		2,544	6,669	3,200	3,710	0	135,312
ROC	78,788	8,160	5,830	4,616	1,294	1,031	12,824	4,041	674	2,041	473	2,544		1,273	815	1,340	0	125,744
BUF	77,998	6,605	3,904	2,459	314	832	15,873	3,791	888	2,896	698	6,669	1,273		32	349	0	124,581
BFX	32,397	3,599	2,597	1,438	221	587	5,541	1,509	270	1,411	344	3,200	815	32		36	0	53,997
NFL	26,143	4,107	2,444	1,343	309	724	6,474	1,370	274	1,128	334	3,710	1,340	349	36		0	50,086
SAR	20,865	1,390	1,786	1,329	356	139	294	300	0	0	0	0	0	0	0	0		26,458
Grand Total	837,956	42,844	43,274	48,766	82,934	79,032	391,576	39,507	6,905	41,061	8,930	135,311	125,743	124,581	53,997	50,086	26,458	2,138,961

Station to Station Rail Trips – 2018 90MPH and 2018 110MPH**2018 90MPH**

Stations	NYP	YNY	CRT	POU	RHI	HUD	ALB	SDY	AMS	UCA	ROM	SYR	ROC	BUF	BFX	NFL	SAR	Grand Total
NYP		599	4,621	17,102	75,168	69,382	305,048	19,284	3,451	22,058	4,958	88,443	88,078	95,354	40,024	31,478	20,865	885,913
YNY	599		8	38	271	621	7,609	1,162	160	2,007	523	6,725	9,931	10,427	5,850	6,357	1,391	53,678
CRT	4,621	8		76	960	965	8,574	1,549	233	2,649	644	6,951	6,474	4,792	3,416	3,315	1,786	47,013
POU	17,102	38	76		245	869	10,099	1,502	203	1,944	476	5,476	5,149	2,634	1,634	1,761	1,327	50,534
RHI	75,168	271	960	245		150	1,462	205	28	502	179	1,689	1,590	337	265	446	356	83,852
HUD	69,382	621	965	869	150		1,438	414	173	488	114	1,596	1,423	1,249	976	1,385	139	81,382
ALB	305,048	7,609	8,574	10,099	1,462	1,438		308	85	3,149	563	15,604	15,929	20,193	7,707	10,258	294	408,320
SDY	19,284	1,162	1,549	1,502	205	414	308		17	838	267	3,956	5,084	4,721	2,088	2,036	300	43,730
AMS	3,451	160	233	203	28	173	85	17		67	20	561	875	1,165	364	423	0	7,822
UCA	22,058	2,007	2,649	1,944	502	488	3,149	838	67		54	1,078	2,496	3,856	1,915	1,739	0	44,841
ROM	4,958	523	644	476	179	114	563	267	20	54		253	601	992	517	515	0	10,677
SYR	88,443	6,725	6,951	5,476	1,689	1,596	15,604	3,956	561	1,078	253		2,927	8,381	4,210	5,103	0	152,952
ROC	88,078	9,931	6,474	5,149	1,590	1,423	15,929	5,084	875	2,495	601	2,927		1,442	926	1,653	0	144,575
BUF	95,354	10,427	4,792	2,634	337	1,249	20,193	4,721	1,165	3,856	992	8,381	1,442		32	353	0	155,929
BFX	40,024	5,850	3,416	1,634	264	976	7,707	2,088	364	1,915	517	4,210	926	32		36	0	69,958
NFL	31,478	6,357	3,315	1,761	446	1,385	10,258	2,036	423	1,739	515	5,103	1,653	353	36		0	66,857
SAR	20,865	1,391	1,786	1,327	356	139	294	300	0	0	0	0	0	0	0	0		26,457
Grand Total	885,913	53,678	47,013	50,534	83,853	81,382	408,319	43,730	7,822	44,840	10,677	152,951	144,575	155,929	69,958	66,857	26,457	2,334,490

2018 110MPH

Stations	NYP	YNY	CRT	POU	RHI	HUD	ALB	SDY	AMS	UCA	ROM	SYR	ROC	BUF	BFX	NFL	SAR	Grand Total
NYP		599	4,621	17,102	75,168	69,381	305,065	19,356	3,486	22,371	5,183	93,212	94,880	107,425	45,263	34,284	20,877	918,271
YNY	599		8	38	271	621	7,609	1,172	165	2,237	612	7,870	12,203	14,056	8,005	8,101	1,391	64,957
CRT	4,621	8		76	960	965	8,574	1,562	242	2,881	744	7,588	7,313	5,532	4,063	3,946	1,786	50,860
POU	17,102	38	76		245	869	10,099	1,514	211	2,127	542	5,999	5,778	2,771	1,779	2,067	1,326	52,541
RHI	75,168	271	960	245		150	1,463	207	29	557	208	1,887	1,828	357	294	529	356	84,509
HUD	69,381	621	965	869	150		1,439	419	181	552	135	1,852	1,765	1,551	1,255	1,810	139	83,083
ALB	305,065	7,609	8,574	10,099	1,463	1,439		309	89	3,505	660	17,592	18,521	23,855	9,599	13,401	294	422,071
SDY	19,356	1,172	1,562	1,514	207	419	309		17	931	310	4,472	5,911	5,478	2,575	2,570	300	47,103
AMS	3,486	165	242	211	29	181	89	17		73	22	630	1,027	1,394	444	536	0	8,546
UCA	22,371	2,237	2,881	2,127	557	552	3,505	931	73		54	1,134	2,838	4,738	2,357	2,218	0	48,572
ROM	5,183	612	744	542	208	135	660	310	22	54		257	678	1,248	674	641	0	11,969
SYR	93,212	7,870	7,588	5,999	1,887	1,852	17,592	4,472	630	1,134	257		3,269	10,262	5,359	6,307	0	167,689
ROC	94,880	12,203	7,313	5,778	1,828	1,765	18,521	5,911	1,027	2,838	678	3,269		1,641	1,051	1,863	0	160,565
BUF	107,425	14,056	5,532	2,771	357	1,551	23,855	5,478	1,394	4,738	1,248	10,262	1,641		32	353	0	180,693
BFX	45,263	8,005	4,063	1,779	294	1,255	9,599	2,575	444	2,357	674	5,359	1,051	32		36	0	82,785
NFL	34,284	8,101	3,946	2,067	529	1,810	13,401	2,570	536	2,218	641	6,307	1,863	353	36		0	78,664
SAR	20,877	1,391	1,786	1,326	356	139	294	300	0	0	0	0	0	0	0	0		26,470
Grand Total	918,272	64,957	50,860	52,541	84,510	83,083	422,071	47,103	8,546	48,572	11,969	167,689	160,565	180,692	82,785	78,664	26,470	2,489,350

Station to Station Rail Trips – 2035 NO BUILD and 2035 79MPH**2035 NO BUILD**

Stations	NYP	YNY	CRT	POU	RHI	HUD	ALB	SDY	AMS	UCA	ROM	SYR	ROC	BUF	BFX	NFL	SAR	Grand Total
NYP		652	4,827	31,820	89,224	95,002	271,351	13,736	3,375	18,498	2,495	30,367	36,298	34,091	12,984	10,331	41,553	696,605
YNY	652		8	46	364	681	4,154	349	90	477	113	527	866	440	218	159	637	9,779
CRT	4,827	8		89	1,021	1,037	5,237	555	79	733	98	1,531	1,669	998	297	188	1,056	19,422
POU	31,820	46	89		306	1,044	7,626	745	91	814	136	2,261	2,614	1,845	1,158	320	1,338	52,253
RHI	89,224	364	1,021	306		179	1,156	83	8	128	32	429	651	325	187	74	402	94,568
HUD	95,002	681	1,037	1,044	179		1,442	212	66	131	24	313	348	253	328	70	215	101,347
ALB	271,351	4,154	5,237	7,626	1,156	1,442		217	52	1,165	163	4,411	5,193	5,073	1,507	704	444	309,897
SDY	13,736	349	555	745	83	212	217		17	445	129	1,424	2,040	1,439	385	238	393	22,407
AMS	3,375	90	79	91	8	66	52	17		44	11	249	405	376	206	45	0	5,113
UCA	18,498	477	733	814	128	131	1,165	445	44		55	642	1,167	1,191	742	191	0	26,422
ROM	2,495	113	98	136	32	24	163	129	11	55		165	271	276	394	62	0	4,423
SYR	30,367	527	1,531	2,261	429	313	4,411	1,424	249	642	165		4,637	3,386	3,932	955	0	55,228
ROC	36,298	866	1,669	2,614	651	348	5,193	2,040	405	1,167	271	4,637		1,308	2,017	1,185	0	60,668
BUF	34,091	440	998	1,845	325	253	5,073	1,439	376	1,191	276	3,386	1,308		32	320	0	51,352
BFX	12,984	218	297	1,158	187	328	1,507	385	206	742	394	3,932	2,017	32		36	0	24,424
NFL	10,331	159	188	320	74	70	704	238	45	191	62	955	1,185	320	36		0	14,880
SAR	41,553	637	1,056	1,338	402	215	444	393	0	0	0	0	0	0	0	0		46,038
Grand Total	696,605	9,779	19,422	52,253	94,568	101,347	309,897	22,407	5,113	26,422	4,423	55,228	60,668	51,352	24,424	14,880	46,038	1,594,824

2035 79MPH

Stations	NYP	YNY	CRT	POU	RHI	HUD	ALB	SDY	AMS	UCA	ROM	SYR	ROC	BUF	BFX	NFL	SAR	Grand Total
NYP		652	4,827	31,858	89,226	95,789	297,831	23,399	5,050	23,529	4,992	81,201	82,357	80,299	33,063	26,886	61,800	942,759
YNY	652		8	47	411	734	7,903	1,311	222	1,962	487	4,323	8,206	6,989	3,941	4,298	2,698	44,191
CRT	4,827	8		89	1,116	1,089	8,346	1,757	263	2,677	585	6,168	5,972	3,955	2,587	2,444	3,465	45,348
POU	31,858	47	89		307	1,076	10,967	1,947	247	2,111	486	5,556	5,336	2,730	1,930	1,528	4,151	70,365
RHI	89,226	411	1,116	307		180	1,495	229	28	448	140	1,419	1,421	344	307	339	1,253	98,662
HUD	95,789	734	1,089	1,076	180		1,517	460	178	446	91	1,316	1,204	928	1,405	815	424	107,654
ALB	297,831	7,903	8,346	10,967	1,495	1,517		300	86	2,572	440	11,659	12,125	14,886	6,296	6,199	597	383,220
SDY	23,399	1,311	1,757	1,947	229	460	300		18	686	221	2,796	3,809	3,266	1,218	1,279	393	43,089
AMS	5,050	222	263	247	28	178	86	18		62	18	454	732	891	380	288	0	8,918
UCA	23,529	1,962	2,677	2,111	448	446	2,572	686	62		55	935	2,055	2,744	1,826	1,130	0	43,238
ROM	4,992	487	585	486	140	91	440	221	18	55		221	488	676	1,106	336	0	10,342
SYR	81,201	4,323	6,168	5,557	1,419	1,316	11,659	2,796	454	935	221		5,347	5,904	8,110	3,629	0	139,038
ROC	82,357	8,206	5,972	5,337	1,422	1,204	12,125	3,809	732	2,055	488	5,347		1,753	2,993	2,211	0	136,012
BUF	80,299	6,989	3,955	2,730	344	928	14,886	3,266	891	2,744	676	5,904	1,753		32	345	0	125,744
BFX	33,063	3,941	2,587	1,930	307	1,405	6,296	1,218	380	1,826	1,106	8,110	2,993	32		36	0	65,230
NFL	26,886	4,298	2,444	1,528	339	815	6,199	1,279	288	1,130	336	3,629	2,211	345	36		0	51,762
SAR	61,800	2,698	3,465	4,151	1,253	424	597	393	0	0	0	0	0	0	0	0		74,781
Grand Total	942,759	44,191	45,348	70,367	98,663	107,655	383,219	43,089	8,918	43,238	10,342	139,036	136,010	125,744	65,230	51,762	74,781	2,390,352

Station to Station Rail Trips – 2035 90MPH and 2035 110MPH**2035 90MPH**

Stations	NYP	YNY	CRT	POU	RHI	HUD	ALB	SDY	AMS	UCA	ROM	SYR	ROC	BUF	BFX	NFL	SAR	Grand Total
NYP		652	4,827	31,858	89,226	95,795	297,972	23,531	5,111	23,994	5,457	88,731	92,633	97,183	40,499	32,147	61,800	991,414
YNY	652		8	47	413	736	7,965	1,330	230	2,176	579	5,497	10,970	11,100	6,402	6,639	2,706	57,448
CRT	4,827	8		89	1,116	1,089	8,346	1,767	272	2,900	692	6,979	6,957	4,868	3,408	3,310	3,465	50,096
POU	31,858	47	89		307	1,076	10,967	1,958	256	2,299	564	6,302	6,146	2,919	2,114	1,986	4,150	73,037
RHI	89,226	413	1,116	307		180	1,495	231	29	519	183	1,720	1,741	366	370	472	1,253	99,620
HUD	95,795	736	1,089	1,076	180		1,517	463	186	532	124	1,713	1,664	1,346	2,021	1,462	424	110,329
ALB	297,972	7,965	8,346	10,967	1,495	1,517		300	89	2,997	529	14,458	15,397	19,458	8,963	9,960	597	401,010
SDY	23,531	1,330	1,767	1,958	231	463	300		18	808	264	3,521	4,823	4,187	1,729	1,916	393	47,237
AMS	5,111	230	272	256	29	186	89	18		71	21	572	954	1,175	489	447	0	9,919
UCA	23,994	2,176	2,900	2,299	519	532	2,997	808	71		55	1,055	2,534	3,701	2,498	1,740	0	47,880
ROM	5,457	579	692	564	183	124	529	264	21	55		251	622	968	1,652	517	0	12,478
SYR	88,731	5,497	6,979	6,302	1,720	1,713	14,458	3,521	572	1,055	251		5,723	7,511	10,736	4,987	0	159,756
ROC	92,633	10,970	6,957	6,146	1,741	1,664	15,397	4,823	954	2,534	622	5,723		1,992	3,400	2,566	0	158,122
BUF	97,183	11,100	4,868	2,919	366	1,346	19,458	4,187	1,175	3,701	968	7,511	1,992		32	349	0	157,156
BFX	40,499	6,402	3,408	2,114	370	2,021	8,963	1,729	489	2,498	1,652	10,736	3,400	32		36	0	84,348
NFL	32,147	6,639	3,310	1,986	472	1,462	9,960	1,916	447	1,740	517	4,987	2,566	349	36		0	68,534
SAR	61,800	2,706	3,465	4,151	1,253	424	597	393	0	0	0	0	0	0	0	0		74,789
Grand Total	991,414	57,448	50,096	73,037	99,622	110,330	401,010	47,237	9,919	47,879	12,478	159,755	158,121	157,156	84,348	68,533	74,789	2,603,173

2035 110MPH

Stations	NYP	YNY	CRT	POU	RHI	HUD	ALB	SDY	AMS	UCA	ROM	SYR	ROC	BUF	BFX	NFL	SAR	Grand Total
NYP		652	4,827	31,858	89,226	95,796	297,986	23,637	5,160	24,301	5,716	93,610	100,200	110,211	46,103	35,136	61,857	1,026,274
YNY	652		8	47	413	736	7,965	1,339	236	2,403	666	6,544	13,515	15,021	8,822	8,508	2,706	69,580
CRT	4,827	8		89	1,116	1,089	8,346	1,781	281	3,140	795	7,631	7,840	5,615	4,069	3,947	3,465	54,041
POU	31,858	47	89		307	1,076	10,967	1,972	264	2,503	639	6,917	6,892	3,068	2,257	2,322	4,150	75,329
RHI	89,226	413	1,116	307		180	1,495	233	30	573	211	1,930	2,004	388	421	560	1,253	100,341
HUD	95,796	736	1,089	1,076	180		1,517	467	194	601	146	2,007	2,074	1,673	2,480	1,936	424	112,397
ALB	297,986	7,965	8,346	10,967	1,495	1,517		302	93	3,356	622	16,568	18,230	23,343	11,329	13,296	597	416,012
SDY	23,637	1,339	1,781	1,972	233	467	301		18	900	307	4,036	5,645	4,921	2,174	2,442	393	50,567
AMS	5,160	236	281	264	30	194	93	18		78	23	649	1,131	1,418	596	575	0	10,747
UCA	24,301	2,403	3,140	2,503	574	601	3,356	900	78		55	1,120	2,916	4,591	3,141	2,260	0	51,940
ROM	5,716	666	795	639	211	146	622	307	23	55		258	709	1,227	2,173	655	0	14,203
SYR	93,610	6,544	7,631	6,917	1,931	2,008	16,568	4,036	649	1,120	258		6,059	9,235	13,753	6,167	0	176,485
ROC	100,200	13,515	7,840	6,892	2,004	2,074	18,230	5,645	1,131	2,916	709	6,059		2,260	3,862	2,806	0	176,145
BUF	110,211	15,021	5,615	3,068	389	1,673	23,343	4,921	1,418	4,591	1,227	9,235	2,260		32	349	0	183,353
BFX	46,103	8,822	4,069	2,257	422	2,480	11,329	2,174	596	3,141	2,173	13,753	3,862	32		36	0	101,245
NFL	35,136	8,508	3,947	2,322	560	1,936	13,296	2,442	575	2,260	655	6,167	2,806	349	36		0	80,996
SAR	61,857	2,706	3,465	4,150	1,253	424	597	393	0	0	0	0	0	0	0	0		74,845
Grand Total	1,026,275	69,580	54,041	75,329	100,343	112,398	416,012	50,567	10,747	51,940	14,203	176,484	176,144	183,353	101,245	80,995	74,844	2,774,500

Appendix C Alternatives Development and Screening Report

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1. Initial Alternatives Development and Screening

1.1. Overview

This appendix presents the alternatives screening and selection process that formed the basis for the alternatives assessment presented in the Tier 1 Draft Environmental Impact Statement (prior to selection of the Preferred Alternative presented in the Tier 1 Final EIS). The reasons and justification for the selection of the Preferred Alternative are presented in the Tier 1 Final EIS.

The High Speed Rail Empire Corridor Program initially considered six passenger rail service alternatives, defined by their “maximum authorized speed” (MAS)¹ ratings along the Empire Corridor West segment of the Corridor that runs between Albany/Schenectady and Buffalo- Depew/Niagara Falls, in addition to a Base Alternative (No Action). Three of the six proposed MAS services were: 79 miles per hour, or mph, (the current passenger MAS west of Hoffmans MP169.9), 90 mph and 110 m p h . Each of these speeds has specific regulatory requirements associated with track geometry and topography and, together, they were deemed to represent a reasonable range of alternatives.

Subsequently, as a result of input from public scoping meetings held in the fall of 2010, “very high speed” (VHS) alternatives of 125 mph, 160 mph and 220 mph MAS were added to the alternatives development and screening process.

1.2. Base Alternative (No Action)

All alternatives include the improvements made under the Base Alternative (No Action). The Base Alternative consists of eight capital improvement projects that have been funded under TIGER grants and other mechanisms. The Base Alternative is carried through the Tier 1 EIS as the Base Alternative (BA) to evaluate the cost and impacts of the program Build Alternatives in relation to the benefits gained by the public through this minimal upgrading of existing service on the existing right-of-way.

The Base Alternative represents a continuation of existing Amtrak service with limited operational and service improvements currently planned and funded to address previously identified capacity constraints. Such improvements would consist of new rail vehicles, maintenance, rehabilitation and improvement to track capacity, signal work, highway-rail crossings, and passenger stations. The key improvement projects under the Base Alternative are summarized in Exhibit C-1. Train frequency would remain unchanged from the existing frequency.

Despite increasing ridership, the Base Alternative makes no provision for any improvement of rail service beyond what is already being operated and programmed by Amtrak, Metro-North and/or NYSDOT. It would assume the continued operation of four daily round-trips of conventional speed Amtrak passenger trains between Penn Station, New York City and Niagara Falls on the Metro-North Rail Road and CSXT-owned alignment.

[#]/MAS refers to the maximum allowable speed for specific types of rail equipment based on track geometry and topography. Most passenger services will spend only a portion of the time at the MAS – steep hills and sharper curves interspersed along the right-of-way will require deceleration and acceleration that result in lower average speeds over the entire length of the segment.

Exhibit C-1 — Base (No Action) Alternative Passenger Rail Improvement Projects

Project Name (Milepost)	ARRA Grant Application	Project Description
Hudson Subdivision Signal Reliability (MP 75.8 to 140)	ES-3	Replace old signal poles (for electric power to signals and communication lines) with underground cable between Poughkeepsie and Rensselaer Station.
Highway-Rail Grade Crossings Safety Improvements CSXT Hudson Line (MP 75.8 to 140)	ES-1	Design and install grade crossing active warning device, roadway approach and/or pedestrian improvements to accommodate improved passenger rail operations between Poughkeepsie and Albany-Rensselaer.
Rensselaer Station Fourth Track Capacity Improvements (MP 141 to 143)	ES-9	Add fourth track and extend platform to increase station capacity, operating speeds, train frequency, routing, and reduce delays.
Albany-Schenectady Double Track (MP 143.2 to 160.3)	ES-10	Design, construct and rehabilitate a second main track between the Rensselaer and Schenectady stations to increase capacity, reduce bottleneck, and improve operations in congested single track segment.
Schenectady Station Renovation /Platform Improvements (MP 159.8)	EW-01	Complete station reconstruction, ADA-compliant platform and station access, viaduct repairs and parking improvements.
Syracuse Track Configuration and Signal Improvements (MP 287 to 291)	EW-6	Upgrade existing third track to reduce congestion, delays and interference between passenger and freight trains.
Rochester Subdivision Third Main Track (MP 382 to 393)	EW-20	New third main track and signal system to improve speed, frequency, and reliability.
Niagara Falls Station – New Intermodal Transportation Center (MP 28.2)	EW-13	New station with improved location in downtown Niagara Falls, function, operation, connectivity, border security, less delays.

ES=Empire Corridor South; EW= Empire Corridor West
Source: NYSDOT ARRA Grant Applications.

1.3. Alternatives Screening

The purpose of the screening process was to dismiss from further evaluation, alternatives that fail to meet the program objectives as articulated in the program Purpose and Need. The screening is also intended to ensure that all alternatives fall within an economically, environmentally and technologically feasible range. Given these premises, the 79, 160 and 220 mph MAS alternatives were eliminated from further evaluation in the Tier 1 EIS. The following is a brief description of the alternatives and an assessment of their shortcomings in meeting the program performance objectives. A summary of this analysis is provided in Exhibit C-2.

Exhibit C-2 — Overview of all Alternatives under Initial Consideration

Empire Corridor Alternatives	Maximum Authorized Speed	Average Speed (Including Stops)	Best Scheduled Travel Time NYC-NFL	Est. Capital Costs (Billions USD)	Annual O&M Cost (Millions USD)	Annual Ticket Revenue (Millions USD)	Annual Net Subsidy (Millions USD)	Est. Annual Ridership	Alternative Description	Notes	Train Technology
BA	79 mph	53 mph	8:45	0.35	84.49	80.06	4.43	1,595,000*	Includes previously approved projects which provide improvements to: Station, Capacity, Signal System and Service Reliability	Existing 110 mph speed maintained Hudson-Albany-Schenectady	
79A	79 mph	55 mph	8:21	1.50	84.49	110.85	(26.36)	2,077,000*	Improvements to make service more reliable, including passing sidings, signals and station improvements.	Existing 110 mph speed maintained Hudson-Albany- Schenectady	“79 mph Series:” Current limit on CSXT Empire Corridor West based on Class 4 track standards and lack of in-cab signaling. Uses current vehicle technology with possibility of integrated trainset.
79B	79 mph	59 mph	7:51	2.00	137.65	119.19	18.46	2,200,000*	Adds trains to increase frequency, including 4 express service trains. Infrastructure same as Alt. 79A.	Existing 110 mph speed maintained Hudson-Albany- Schenectady	
79C	79 mph	60 mph	7:41	8.10	151.60	131.13	20.47	2,379,000*	Adds a new dedicated single main track to existing alignment (15-ft. track centers). Adds 4 express service trains.	Existing 110 mph speed maintained Hudson-Albany- Schenectady	
90A	90 mph	60 mph	7:43	2.50	137.65	123.51	14.41	2,267,000*	Same improvements as 79B, but includes train control improvements to allow 90 MPH operation where supported by the alignment. Includes grade crossing warning system upgrades at all public crossings.	Existing 110 mph speed maintained Hudson-Albany- Schenectady	“90 mph Series:” Next step up (Class 5) in track standards (also requires PTC with in-cab signaling). Uses current vehicle technology with possibility of integrated trainset.
90B	90 mph	64 mph	7:09	9.90	152.60	144.79	7.81	2,589,000*	Adds a new dedicated single main track to existing alignment (15-ft. track centers) / Includes PTC Signal System for new main track.	Existing 110 mph speed maintained Hudson-Albany-Schenectady	
110	110 mph	67 mph	6:51	10.80	154.70	155.62	(0.92)	2,775,000 *	Adds trains to increase frequency, including 4 express service trains/Adds a new dedicated single main track to existing alignment (30-ft. track centers)/Includes PTC Signal System, including cab signals/Includes warning system upgrades		110 mph: Next step up (Class 6) in track standards (current top speed along dedicated track between Hudson-Albany/Rensselaer and Schenectady). Uses current vehicle technology with possibility of integrated trainset.
125	125 mph	74 mph	5:38	15.00	278.63	183.60	95.03	3,188,000 **	New alignment on sealed corridor / Electrification of new track / Adds trains to increase frequency beyond level in 110 alternative/ New stations / Elimination of grade crossings / New PTC Signal System	Ridership analysis based on the prior developed model and ridership numbers have a conservative bias. Buffalo to Albany is 18 miles shorter than existing Corridor, Albany - NYC on existing. Niagara Falls via 10 minute platform connection at Buffalo.	125 mph: the first speed threshold for electrified operation and the performance benefits achieved through electrically-powered trains
160	160 mph	85 mph	4:54	27.00	321.50	237.65	83.85	4,067,000 ***	New alignment on sealed corridor / Electrification of new track / Adds additional trains in excess of 110 alternative / New stations / Elimination of grade crossings / New PTC Signal System	Ridership analysis based on the prior developed model and ridership numbers have a conservative bias. Buffalo to Albany is 18 miles shorter, Albany - NYC is 39 miles longer than existing Corridor via connection to Northeast Corridor at Rye, NY. Niagara Falls via 10 minute platform connection at Buffalo.	160 mph: practical upper limit of electrified dynamic tilt trains, such as the Amtrak Acela, that provide faster operating speeds on curves
220	220 mph	93 mph	4:29	39.00	333.40	298.83	34.57	5,122,000 ****	New alignment on sealed corridor / Electrification of new track / Adds trains to increase frequency beyond level in 110 alternative, including 4 express service trains / New stations / Elimination of grade crossings / New PTC Signal System / 220 mph includes specialized train sets	Ridership analysis based on the prior developed model and ridership numbers have a conservative bias. Buffalo to Albany is 18 miles shorter, Albany - NYC is 39 miles longer than existing Corridor via connection to Northeast Corridor at Rye, NY. Niagara Falls via 10 minute platform connection at Buffalo.	220 mph: practical upper limit of world class high speed rail operations in France, Germany, Spain, Japan and China

* Ridership numbers are based on initial operating plans with 13 round trips between NYP (Penn Station) and Buffalo

** Ridership numbers are based on operating plan with 125 MPH MAS operating speed in conjunction with the existing service plan along the Empire Corridor. Total number of 15 round trips between NYP-NFL, with stops at ALB, UCA, SYR, ROC and BFX

*** Ridership numbers are based on operating plans with 160 MPH MAS operating speed in conjunction with the existing service plan along the Empire Corridor. Total number of 15 round trips between NYP-NFL, with stops at ALB, UCA, SYR, ROC and BFX

**** Ridership numbers are based on operating plans with 220 MPH MAS operating speed in conjunction with the existing service plan along the Empire Corridor. Total number of 15 round trips between NYP-NFL, with stops at ALB, UCA, SYR, ROC and BFX

1 Original Ridership model was designed to analyze the effect in the improvement of the Empire Corridor Rail Service. This model does not fully capture the ridership benefits associated with Very High Speed Rail which would be an much enhanced and new travel mode along this corridor.

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1.3.1. Alternative 79

The 79 mph MAS alternative was developed with three variations, each of which represented different levels of rail infrastructure improvements, and, therefore, associated costs. These sub-alternatives were termed Alternative 79A, Alternative 79B and Alternative 79C. All three of the 79 mph alternatives were to provide greater reliability and fewer conflicts with existing and future CSXT freight movements along the Empire Corridor West segment (under all cases, service characteristics along Empire Corridor South between Albany-Rensselaer and New York Penn Station would remain unchanged).

Alignment and Service

Alternative 79A is focused on improving the reliability of existing passenger rail service. The frequency of service would remain at four round trips a day. Current on-time performance is low, discouraging ridership and adding to Amtrak operating costs. The goal of the 79 alternatives is to incorporate sufficient capital improvements to the rail system to ensure 85-90 percent on-time performance between Albany, Buffalo and Niagara Falls. To accomplish this, under Alternative 79A, the existing Empire Corridor track alignment would be used, which includes track, signal and station projects already approved by FRA as part of the Base Alternative, and additional capacity and station improvements.

Alternative 79B includes each of the improvements identified under Alternative 79A, along with service improvements that increase train frequency from four (4) to eight (8) round trips a day. Under Alternative 79C, all capacity and service improvements made under Alternative 79B would be made in addition to the construction of a dedicated third main track reserved largely for passenger trains, and segregated both physically and operationally from virtually all freight rail traffic. For Alternative 79C, the conceptual track improvements include a dedicated passenger track between MP 167 and MP 433, and the addition of five segments of fourth main track to facilitate “flying meets” between opposing direction passenger trains, in which trains can pass at normal speeds, with neither train needing to slow or stop to allow the other to pass.

Ridership Travel Time and Capital Costs

As indicated in Exhibit C-2, Alternatives 79A-79C have an estimated cost of 4.3 to 23 times greater than the Base Alternative cost of \$350 million, and result in a 30 - 50 percent increase in ridership. Alternative 79A results in a minimal 24 minute time savings over the Base Alternative with a \$1.15 billion dollar greater investment required, while 79C results in a 54 minute time savings and a \$7.8 billion dollar greater investment over the base. When compared to the other alternatives, a similar or even lesser investment results in much greater time savings and slightly more ridership gains.

Conclusion

None of the 79 mph MAS alternatives provide a significant operational or cost advantage over the 90 mph MAS alternatives, which are distinguished primarily by track structure improvements to support higher passenger train speeds where feasible within the existing corridor alignment.

Because there was no substantive and positive differentiator of the 79 mph alternatives, they were not advanced for further consideration, as they did not meet the program purpose and need. In each case, the comparable 90 mph alternative showed superior trip time and ridership with a relatively small variance in estimated cost, resulting in the 90 mph MAS alternatives being retained over their slightly inferior 79 mph counterparts.

1.3.2. Alternative 160 and Alternative 220

The Very High Speed (VHS) Alternative 160 represents the practical upper limit of the existing Amtrak Acela-like electrified dynamic-tilt trains. The VHS Alternative 220 represents the current practical upper limit of world-class high speed rail operations as seen in France, Germany, Spain, Japan and China. Both involve the construction of a new, sealed two-track electrified railway paralleling Empire Corridor West and South, dedicated exclusively to high-speed passenger train service.

Alignment and Service

As distinct from current operations running along the west side of Manhattan and over the Spuyten Duyvil bridge, the VHS alternatives would emerge from New York City on the existing Northeast Corridor heading east towards New Haven along the I-95 corridor. On Empire Corridor South, it is not feasible to augment or supplant the existing right-of-way parallel to the Hudson River with a VHS alignment, due to the lack of physical space: the current railway is bounded to its immediate west by the Hudson River and by various town centers and rock formations to its immediate east, such that widening the right-of-way could only be accomplished with severe disruption to the natural River environment and local communities and their town centers, and at extraordinary cost. The course of the river and the surrounding terrain being densely developed and relatively undulating would not support the addition of new tracks or the much straighter geometry required to attain VHS.

Given the difficulties associated with VHS train operation in the existing Empire Corridor South, a number of new corridors between New York City and Albany were considered, all of which include difficult terrain in their own right, as well as service through densely populated areas or aligned with intensively used regional highways for much of the route. The corridors selected, however, while complicated by highway geometry, overpasses and interchanges, are designated as transportation corridors and could potentially support additional infrastructure, should it prove appropriate and affordable.

The proposed VHS routing would branch onto a new, high-speed alignment just north of New Rochelle/Rye, heading northwest along the I-684 median on structure or at grade. The routing would merge onto I-84 and cross the Hudson River via a new heavy rail bridge (the I-84 Bridge cannot be cost-effectively re-engineered to accommodate the additional load of heavy inter-city trains). Roughly paralleling the I-84 alignment, the routing would either loop around Stewart Airport or proceed directly up the New York State Thruway (I-87) median to Albany, generally on viaduct structure to allow smoothing of tight curves while minimizing property acquisition and environmental impacts. This would result in an entirely new station and market configuration. In either case, however, conflicts with existing highway overpasses would require extraordinary solutions, with the VHS right-of-way passing either deeply beneath or well above them, with concomitant engineering challenges and high costs.

On the western corridor, the VHS options would connect the northern cities of Buffalo, Rochester, Syracuse and Albany, with new “rural” corridors away from the existing right-of-way, through generally open land. These new segments would re-connect with the existing right-of-way as it passes through the major cities via open areas or on structure, with some property acquisition likely required.

Presuming an entirely separate VHS right-of-way between New York City and Albany as described above, attaining the high average speeds commensurate with the proposed investment would result in the likely diversion of VHS service from all but four of the existing Empire Corridor West stations. Albany-Rensselaer, Syracuse, Rochester and Buffalo-Exchange Street stations would serve both the VHS and any continued “legacy” Empire Corridor passenger service; the other stations – Utica, Rome, Schenectady – would be provided only the existing service, with no VHS stop in those cities. As such, there would be no synergies between existing commuter rail and high speed rail services in the corridor under these alternatives. With displacement of the VHS Empire Corridor South right-of-way to a corridor west of the Hudson River, it would not be possible to use Metro-North Railroad (MNR) commuter services to originate at a suburban station and connect to a high speed rail train.

Ridership, Travel Time and Capital Costs

The dedication of segregated right-of-way under the VHS alternatives would result in significant travel time savings between New York City and Niagara Falls (4:54 and 4:29 respectively for Alternative 160 and Alternative 220, versus the current 9:00 hour travel time using existing services), and commensurately higher estimated ridership (4.06 and 5.12 million respectively for Alternative 160 and Alternative 220). Travel gains for Alternative 160 and Alternative 220 would be roughly proportionate with the increase in speed, as the overall alignments would be of generally similar length, number of stops and service offerings.

The costs for the two VHS alternatives include 40 additional route miles between Albany and New York and complex and costly viaduct construction for portions of the route. If Alternative 160 or 220 options were advanced further, a “compromise” corridor alignment could possibly result that better balances use of existing and new corridors, which might result in lower viaduct costs. For purposes of this analysis, however, the VHS alignment is assumed to require a fully separate right-of-way, and therefore, results in a conservative estimate of capital cost.

Mile-by-mile infrastructure quantities were not developed for the VHS alternatives. Rather, the work items associated with constructing the alternatives were aggregated into broad categories using average costs from industry standards. Property acquisition, miles of viaduct, major and minor river crossings, grade separations, and average track, signal and electric catenary wire system construction values were taken from other high-speed systems. Overall, the estimated costs for Alternatives 160 and 220, in 2015 dollars, are \$27 billion and \$39 billion, respectively. These costs range from 1.8 to 2.6 times more than the cost of Alternative 125, as shown in Exhibit C-2.

Conclusion

Both the 160 and 225 mph MAS alternatives have been screened from this Tier 1 EIS, as only modest (compared to Alternative 125) ridership and travel time gains would be gained at an immense cost, and with significant environmental and community impacts. An extraordinary level of capital investment would be required for straight, electrified track in a tightly constrained corridor where the right-of-way occupies a narrow sliver of land between the Hudson River to the west and challenging natural (rock outcroppings) and community features (densely populated towns surrounding the

stations) to the east. Although these alternatives would meet program performance objectives and thereby satisfy the Purpose and Need, the improvements would come at a cost that is, by any current measure, financially infeasible at \$37 billion (160 mph MAS) and \$39 billion (220 mph MAS), costs that are 30 to 43 times greater than the Amtrak intercity rail capital program for the entire United States was in FY2011.

For all of these reasons, the VHS alternatives are not advanced for further development in the Tier 1 Draft EIS. More prudent and feasible alternatives exist which confer transportation benefits more proportional to their costs, and which do not have such substantial negative costs, including property-takings, and community and environmental impacts.

1.4. Feasible Alternatives Advanced for Further Study

As a result of the preliminary screening, it was determined that Alternatives 90, 110 and 125 were appropriate for further development. Within Alternative 90, sub-alternatives were developed that were distinguished by their degree of reliance on existing CSXT mainline track for movement of passenger trains or by their inclusion of a new dedicated third main track (with fourth main track in selected locations) that would support most passenger train movements on tracks that do not also host freight trains.

During alternatives screening, future ridership was forecast using a methodology that would permit a reasonable assessment of the mobility benefits of each alternative. From this analysis, it was clear that all of the alternatives considered would produce higher inter-city rail ridership in response to higher speed and shorter trip times compared to the Base Condition. Therefore, ridership was not a primary factor in eliminating any of the alternatives. For the alternatives retained for further analysis, these preliminary ridership estimates were further refined using a statistical ridership model based on detailed simulations of passenger rail service that were conducted to minimize conflicts between passenger and freight trains sharing Empire Corridor tracks and switches.

The following is an overview of the four build alternatives plus the Base Alternative that were advanced for further study:

- **Base Alternative:** consists of eight capital improvement projects that have been funded from TIGER grants and other sources.
- **Alternative 90A:** consists of 20 capital improvement projects previously identified for potential TIGER grants and other funding. This alternative would provide a 90 mph MAS and limited express service, and also includes the Base Alternative projects.
- **Alternative 90B:** consists of additional areas of third track and fourth track and station improvements to accommodate a 90 mph MAS. This alternative also incorporates the 20 Alternative 90A improvements, in addition to the eight Base Alternative projects.
- **Alternative 110:** consists of additional areas of third track and fourth track and station improvements to permit of 110 mph MAS. This alternative also incorporates the 20 Alternative 90A improvements, in addition to the eight Base Alternative improvements.
- **Alternative 125:** maintains existing (“legacy”) Empire Service and incorporates express service over a new, electrified, grade-separated two-track right-of-way for the Empire Corridor West segment, providing a 125 mph MAS between Albany-Rensselaer and Buffalo Exchange Street. At

Syracuse and Rochester, the segregated right-of-way rejoins existing CSXT tracks and serves those stations. Alternative 125 incorporates Base Alternative improvements and those Alternative 90A improvements along the Hudson Line and Niagara Branch and the portions of Empire Corridor West that overlap with the new route.

1.4.1. Alternatives without Significant New Mainline Track

Alternative 90A features significant capital improvements, but not a new third or fourth main track on the existing Empire Corridor. The specific improvements included are based on an evaluation of potential capital projects developed for each segment of the corridor. Between New York and Albany-Rensselaer, improvements are based on those identified in the *Hudson Line Corridor Railroad Transportation Plan* (2005), a joint effort among NYSDOT, CSXT, MNR and Amtrak. These fourteen improvements were identified in the plan with a likely year of implementation, based on operational need, capital cost, available funding and permitting/design status.

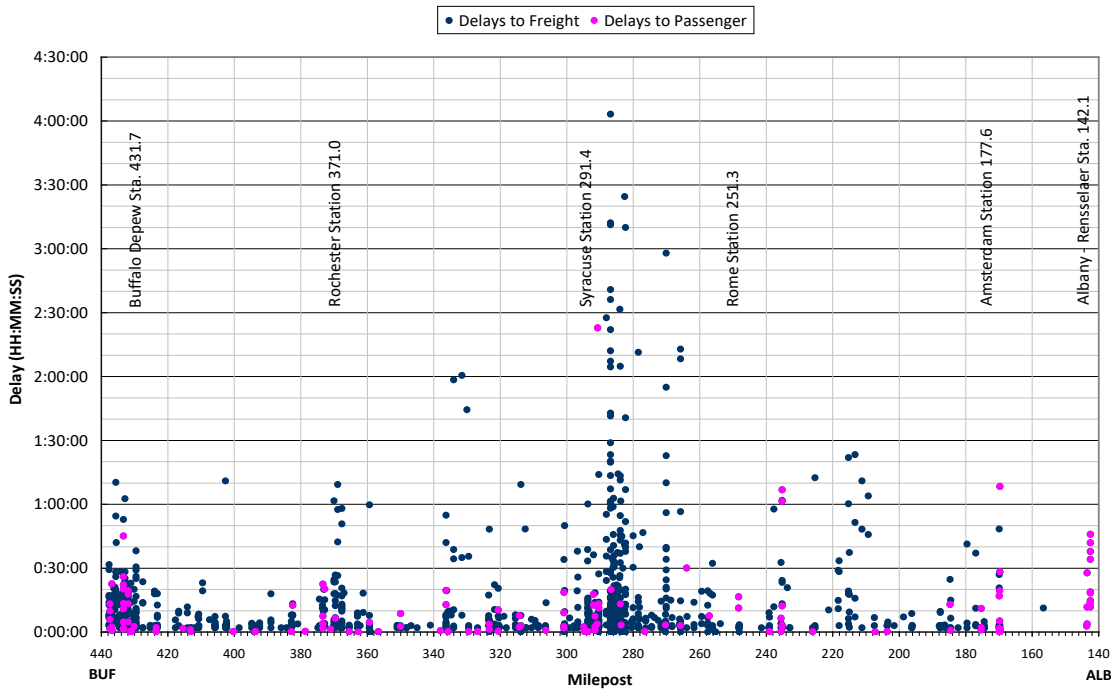
West of Albany, some 33 improvement projects not already included in the Base Alternative were identified. These include projects from:

- NYSDOT ARRA grant applications to the FRA, which are, in turn, based on CSXT suggestions;
- The New York State Rail Plan; and
- Improvements suggested by the HNTB Team.

As with New York-to-Albany projects, these improvements were designated with a likely year of implementation based on operational need, capital cost, available funding and permitting/design status. Priority was given to projects that reduce the incidence and severity of delays caused by passenger and freight trains conflicts on shared tracks. These delays were identified from the 2008 Empire Corridor baseline simulation model, which was calibrated to reflect current operations in 2010, when this analysis was performed. The scatter plot shown in Exhibit C-3 — Empire Corridor West: 2008 Delays shows the location of the current delays, along with their magnitude (the vertical axis represents the duration of a single delay event, with the top of the chart representing a single delay lasting 4 ½ hours). While passenger train delays (shown in magenta in the graph) were given highest priority for resolution, freight train delay (shown in blue) mitigation was also pursued. This is because the program Purpose and Need includes a goal to avoid degradation of freight rail service in the corridor as passenger rail service improvements are implemented. Further, delayed freight trains often result in secondary delays to passenger trains due to congestion and loss of dispatching flexibility, so it is in the interest of both passenger and freight rail services to minimize them.

Exhibit C-3 — Empire Corridor West: 2008 Delays

2008 Baseline Simulation Results - Empire Corridor West Delay Scatter Plot



West of Albany, the locations with the greatest magnitude of passenger delays in the simulation model are Syracuse, Rochester and Buffalo-Depew. Each of these stations has just a single passenger train platform edge, meaning that passenger trains are likely to be delayed by opposing direction passenger trains seeking to make a station stop at the same time. For this reason, double edge (one west-bound and one east-bound) platforms were given priority in the development of Alternative 90A at these three stations.

1.4.2. Alternatives with Significant New Mainline Track

Alternatives 90A, 90B and 110 present an incremental approach to providing improved rail services on the Empire Corridor. The improvements common to all three alternatives include installation of increasing lengths of new third track along the Empire Corridor West right-of-way, straightening of curves to allow higher speeds, improvements to signal systems, improvements to existing or installation of new interlockings, and reconfigured stations and platforms. These options result in improved operational flexibility and reduced trip times. However, conflicts with freight trains are only reduced, not eliminated, and curves with reduced allowable speeds remain. Compared to Alternative 90A, Alternatives 90B and 110 feature significant new mainline track between Schenectady and Niagara Falls. These two alternatives are distinguished largely by the higher design speed, 90 mph

and 110 mph, respectively. Alternative 110 therefore produces somewhat faster service due to its higher speed and the inclusion of additional passing sidings (fourth track) that are not included in Alternative 90B.

Per FRA regulations, both of these alternatives will all require a new train control system (such as Positive Train Control) over the Empire Corridor West right-of-way to support operating speeds higher than the current 79 mph.

The alternatives with significant new mainline track include new Empire Corridor tracks between milepost (MP) 167 (just east of the junction with the Selkirk Branch at a location known as Hoffmans within the town of Glenville), to MP 433 (just west of Depew Station, Buffalo). These alternatives have been developed based on the requirements of single train simulations and meet locations, levels of service, desire to limit potential freight impacts and engineering requirements.

Each alternative, at a minimum, would provide the same level of freight operational flexibility as exists currently, and each seeks to improve freight capacity by moving the passenger trains off of freight mainlines onto dedicated passenger tracks.

For Alternative 90B, the conceptual track alignment consists of a dedicated passenger track between MP 167 and MP 433 with five additional segments of fourth main track to facilitate “flying meets” between opposing direction passenger trains. The new passenger track mainline is generally located 15 feet (ft.) to the north of the existing freight mainlines with the fourth main track segments located 15 ft. to the north of the dedicated passenger third track.

To limit conflicts between passenger and freight trains, several grade separations have been included in Alternative 90B. These are located near MP 279 (the east side of Dewitt Yard), MP 366 (the east side of Rochester Yard), and MP 427 (just east of Buffalo-Depew), which are the locations of the most significant freight-passenger conflicts.

Alternative 110 adheres to a May 2010 framework agreement between CSXT and NYSDOT. It is intended to support 110 mph maximum speed passenger train operation, while remaining in compliance with CSXT design and safety standards, guidelines and policies. Most notably, it provides for a separated and dedicated track for any passenger train operating at speeds in excess of 90 mph, with a minimum of 30 ft. measured from the center line of the freight track to the center line of the proposed passenger track. In locations where it was not practical to meet the required 30 ft. offset, the dedicated passenger track is located 15 ft. from the freight mainline and the maximum speed is 90 mph. Alternative 110 includes six segments of dedicated fourth main track to facilitate “flying meets” between opposing direction passenger trains. Because the existing two mainline tracks and former (now removed) third and fourth tracks are at 13-foot track centers or less, the 30-foot minimum separation has significant implications for this alternative. While it is possible to locate the new passenger third mainline 30 ft. from the existing freight tracks, providing a further 15 ft. for any fourth main track (a full 45 ft. from the existing freight mainlines) is problematic and possibly cost-prohibitive. Therefore, the segments of fourth main track have been located between the existing freight mainline and the proposed passenger third track; the maximum allowable speed on the fourth main track will be limited to 90 mph to comply with CSXT requirements.

1.4.3. Very High Speed Alternatives with Complete Grade Separation

The upper speed limit for dual-mode diesel and electric locomotives is 125 mph. As previously discussed, it is not feasible to augment or supplant the existing Empire Corridor South/Hudson River right-of-way between New York City and Albany, with a VHS alignment that could support 125 mph train operation. Such an alignment would result in significant impacts to existing communities and infrastructure along the Hudson River, or to the River itself. Under Alternative 125, train operation would be diesel between New York City and Albany at the current maximum authorized speed of 110 mph, and electric operation via overhead catenary wire on a new Empire West Corridor built for a 125 mph MAS to Buffalo, with a transfer at Buffalo Depew Station for the final leg to Niagara Falls.

For passenger train speeds exceeding 110 mph up to 125 mph, FRA standards for protection of rail and road traffic state that “the railroad shall submit for FRA’s approval a complete description of the proposed barrier/warning system to address the protection of highway traffic and high-speed trains.” FRA guidelines indicate that such a barrier/warning system technology may not exist at this time. Alternatives to grade separation include consolidation and closure of highway, public or private crossings, which is possible at some locations, but impractical at others if rail freight services are to be maintained. At this time, therefore, complete grade separation at all crossings is assumed for Alternative 125.

In general, Alternative 125 connects the major Empire Corridor West cities of Buffalo, Rochester, Syracuse and Albany with a new “rural” corridor away from but parallel to the existing right-of-way, through generally open land. These new segments re-connect with the existing right-of-way in the major cities via open areas or on structure, with some property acquisition likely to be required. This new, high speed passenger train-dedicated corridor at 125 mph MAS, making express stops only, reduces trip time by 45percent.

2. Engineering Assumptions and Discussion: Alternatives 90, 110 and 125

The following engineering assumptions were derived based on review of both the NYSDOT/CSXT Framework Agreement (May 2010) and program goals. These assumptions served as initial information for discussion of the alternatives, and have since been modified based on further input:

2.1. Alternative 90A

Proposed tracks are assumed to be mixed use tracks and have been primarily laid out using CSXT design criteria of 5 inch Ea (superelevation), with 1.5 inch Eu (underbalance) for freight and 5 inch Eu for Passenger, and No. 20 turnouts where feasible.

- Proposed Tracks will be offset 15 feet from the existing tracks where feasible.
- Existing track centers will be maintained in location where right-of-way is constrained.
- Proposed improvements will be constructed within the existing right-of-way.

- Proposed tracks will allow 79 mph MAS where feasible. There are several existing physical constraints that prevent the proposed projects from obtaining 79 mph MAS.
- Private and public crossings will be modified to accommodate the proposed tracks alignments. Crossing protection will be upgraded as necessary to accommodate the additional tracks and/or reconfigurations.
- Passing sidings (4th track) have been provided where feasible under alternative 79C to provide opportunities for meets without incurring delays.
- In some locations, the existing tracks were shifted or realigned to meet the program requirements.

2.2. Alternatives 90B and 110

- New passenger tracks are assumed to be dedicated passenger tracks. The only time freight would be on these tracks is for local freight operations over short distances and occasional use during major track maintenance windows or operational emergencies. This means that 6" Ea, 5" Eu, and No. 32.75 turnouts would be used on the new passenger tracks instead of the CSXT design criteria of 5" Ea, 1.5" Eu, and No. 20 turnouts.
- Private and public crossings locations will be identified. Crossing protection options will be evaluated in Tier 2 consistent with the FRA's Highway Rail Grade Crossing Guidelines for High Speed Rail.
- For 110 mph operations, passing sidings (4th track) were assumed to have a 90 mph MAS and located 15 ft. from the existing mainline (that is between the existing mainline and the 30 ft. offset to a proposed 110 mph passenger track). Due to 80 mph operation through the diverging side of the number 32.75 turnouts at each end of the sidings and the distance required for the typical diesel powered train consist to accelerate from 80 mph to 110 mph (approximately 7.5 miles compared to a little over one mile from 80 to 90 mph), the 90 mph limitation would not be considered significant to overall run times on a 10 mile long segment of fourth track. The cost of placing the sidings to the outside of the proposed passenger main, or 45 ft. from the existing number 1 track, exceeds the value of the slight improvement in run times of trains running through the sidings. The 110 mph alternative would include sections of dedicated single passenger mainline that would require significant right-of-way to achieve speeds greater than 90 mph, and have been designed using a 15 ft. track center from the existing mainline and assigned a maximum speed of 90 mph. An example can be found from MP 328 to MP 350 shown on the 110 mph engineered track schematic.
- Where existing/relocated local freight sidings are present, it is assumed that the 110 mph track can be as close as 15 ft. to the freight siding. (If a 30-ft. track spacing is desired in these types of locations to achieve 110 mph, the passenger track MAS may need to be reduced to 90 mph through the area in question due to proximity of additional industry tracks and buildings, or may require relocation to create greater physical separation.)

- Where passenger trains need to co-mingle with freight, No. 20 turnouts were used; where passenger only, No. 32.75 turnouts were used, generally at the ends of the passenger train passing sidings.
- In some locations, the existing tracks were shifted or realigned to meet the design requirements. Grade separations of the new passenger mainline from the existing mainlines were used to avoid significant conflicts with freight trains at critical locations including the east approaches to Syracuse/ Dewitt Yard, Rochester, Buffalo-Depew.

2.2.1. Alternative 110 – Brief Overview from a Track Engineering Perspective

A conceptual alignment to achieve 110 mph operation with 30 ft. track centers from the existing mainline tracks was developed in CADD using an ideal design approach to curve modifications, if it were physically possible to achieve the curve geometry and 30 ft. track centers, along with engineer's judgment to determine the highest speed attainable. Isolated curves with a design speed less than 110 mph and locations where 30 ft. track centers were not feasible were given close scrutiny to determine an optimum balance among the goal of reduced trip time, cost, and environmental consequences. In some locations, a design speed of 90 mph was considered the best alignment possible and a 23-mile segment of very restrictive curves west of Syracuse, where an increase above 80 mph would incur miles of major realignment.

2.2.2. Examples of Where Desired Speeds Were Attained With Additional Work

1. Big Nose Curve

At Big Nose curve (MP 192.5, west of Amsterdam), 60 mph is the highest speed if the present alignment is retained. Recognizing the significant impact that an isolated 60 mph curve has on the 110 mph alternative, a 90 mph curve easement was defined onto the present NY State Route 5 location at the foot of the significant rock cut at the "nose." Since NY State Route 5 is about 20 ft. higher than the railroad at the base of the rock cut, it was determined that, rather than cutting the highway alignment further into the steep rock face, NY State Route 5 could instead straddle the relocated railroad on a viaduct more or less parallel to the railroad. Construction phasing of this improvement under both rail and highway traffic would be difficult and even slight alteration to the significant regional visage of the "nose" could generate opposition. However, a workable solution to this very restrictive curve would provide significant benefits to the program.

2. Tribes Hill Curve

At Tribes Hill curve (MP 182 west of Amsterdam), an existing curve of 60 mph is followed immediately by an eased curve in the opposite direction of 80 mph. A 90 mph design was

achieved through both curves with a major realignment, including a 3,000 ft. cut up to 65 ft. deep through adjacent forest and farmland.

2.2.3. Examples of Where Desired Speeds Were Not Attained Due to Physical Constraints

1. Little Falls

Little Falls (east of Utica) remains highly problematic due to both a very restrictive right-of-way width and sharp curves. Currently, a double-ended freight siding passes through Little Falls between CP215 and CP218. There is not enough room to maintain both the siding and a new passenger track through the narrowest part of the right-of-way in the town center. With several apparent freight consignees in Little Falls, access was maintained for local freight service from the west at CP218, with a separate siding ending in the center of Little Falls before the most restrictive section, where a short runaround track was provided at the end of that track. An existing three-degree curve in the center of town dictates a speed of only 60 mph. Several curves on both approaches to Little Falls have speeds less than 110 mph, which is not a significant issue since actual speeds on those curves will be much lower in light of the governing 60 mph curve at Little Falls.

2. Restrictive Curves West of Syracuse

From MP328 to 351, there is a series of consecutive curves that limits speeds from 70 to 100 mph, with many at 80 mph. Although it may be possible to remedy a few of these curves, given the fact that it takes so long for a train to recover speeds in the range of 80 to 110 mph, unless all of the curves can be modified, there is little to be gained in modifying the few curves that can be feasibly realigned for 110 mph operation.

2.3. Alternative 125

- Two-track, electrified, dedicated high speed passenger corridor between Albany and Buffalo.
- In general, Alternative 125 connects the major Empire Corridor West cities of Buffalo, Rochester, Syracuse and Albany with a new “rural” corridor away from and parallel to the existing right-of-way, through generally open land. These new segments re-connect with the existing right-of-way in the major cities via open areas or on structure, with some property acquisition likely to be required.
- New York City to Albany will be diesel operation on existing Empire Corridor track.

3. High-Level Costs for Alternatives 90, 110 and 125

3.1. Engineering Cost Estimate Methodology and Assumptions for Alternatives 90 and 110

Infrastructure Capital Costs

The cost estimates for the alternatives are derived from the conceptually engineered track alignments created to define the infrastructure improvements necessary for each alternative. In conjunction with the engineered track alignments, aerial photography, approximate right-of-way lines, locations of existing freight mainlines and sidings, grade crossings, overhead and undergrade bridge locations, and existing topography were used to develop the associated order-of-magnitude cost estimates. Signal costs (where applicable) have been developed using a per-mile cost based on the proposed infrastructure.

Rolling Stock Assumptions and Costs

The cost estimates assume that only the additional rolling stock necessary to allow the incremental additional trips between New York City Pennsylvania Station and Niagara Falls will be included in the cost estimates for the alternatives. The cost of rolling stock necessary to operate the current service is not considered part of this analysis. The program assumes that out of the four additional round trips, two trips will be addressed with two train sets, while the other trips will be covered by one-way daily trips per train set. This means a total of six new train sets with two spare train sets; therefore, a total of eight train sets are assumed for this program. For conventional locomotive-hauled train sets, \$5 million per locomotive and \$3 million per coach were assumed, including spare parts, training programs, manuals, soft costs, etc. In sum, \$26 million per train set, or \$208 million for new rolling stock, was assumed. As rolling stock values are reasonably well documented, a 5percent contingency is applied to account for uncertainties in final specifications for the particular service characteristics and signal control requirements yet to be determined.

Contingency Factor

Planning studies typically have large contingency factors (30%-35% or greater). Considering the length of this study area at 463 miles (over approximately 300 miles of which there are to be considerable infrastructure improvements), the diversity of the proposed alternatives (the 90 mph and 110 mph alternatives have considerable lengths of proposed track re-alignments outside the current railroad right-of-way), and the sheer magnitude of unknowns (bridge replacements vs. rehabilitations, volume of earthwork, property/building acquisitions, station design and amenities, final interlocking configurations, utility relocations, construction phasing issues, stakeholder requirements, etc.), a contingency of 35percent was applied to estimates for alternatives with maximum operating speeds of 90 mph and higher. The Base Alternative has no contingency, since the component improvements have been approved and funded, and design is far along or complete.

Design/Engineering Costs

It was assumed that an additional 20percent of the infrastructure costs would be allocated for engineering, permitting, construction inspection, administration and force account fees.

Escalation Costs

The estimates were developed with 2015 as the base year, to allow easy comparison among alternative capital costs in relatively current dollars. Where costs were estimated (or, as in the case of rolling stock purchases, known) in 2009, 2010, or 2011 dollars, these costs were escalated at 4percent compounded annually until the 2015 base year value was established.

Details of Alternative-specific estimates**3.2. Alternative 90A**

Alternative 90A is essentially contained within the current and/or historic New York Central/CSXT railroad footprint. Estimating its cost was accomplished with five major categories of improvements: Track, Control Points, Grade Crossings, Bridges, and Station Facilities. Refer to Exhibit C- 4 for additional information.

Exhibit C-4 —Unit Cost Assumptions for All Alternatives

Property		Track & Signals		Bridges & Structures		Roads & Crossings	
Property Acq. (Per Acre)		Subgrade Prep. & Sub-Ballast		Erosion Control		Highway Reloc. (Per Sy)	
\$40,000	Marsh	\$12.00	per SY	\$12	per LF	\$140	Secondary
\$85,000	Farmland					\$224	Highway
\$200,000	Suburban						
\$800,000	Town						
Building Acquisition And Removal (Per Sf)		New Track (Per Track-Foot)		Drainage Pipes & Box Culverts (Per Sf)		Grade Crossings Private (Each)	
\$200	Residence	\$175	Yard or Spur	\$125	Pipe		
\$350	Business	\$225	Main Track	\$1,000	60-100 sf	\$5,000	
				\$1,800	100-140 sf	per track	
Clearing (Per Acre)		Track Throws (Per Track-Foot)		Bridge Demo (Per Sf)		Grade Crossings Public (Per Track-Foot)	
\$12,000	Country	\$40	5 feet or less	\$175	Conc. Steel	\$2,800	Single Trk.
\$16,000	Town	\$80	5 to 13 feet	\$85	Girder	\$3,200	Double Trk.
\$20,000	City			\$125	Steel Truss	\$3,600	Triple Trk.
Fill Section (Per Cy)		Retire Track (Per Track-Foot)		New Bridges (Per Sf)		Warning System (Each)	
\$12	Open	\$25	Main Trk.	\$400	Conc. 36-48'	\$350,000	Small Rural
\$20	Retained	\$15	Yard Trk.	\$375	Steel 30-60'	\$400,000	Medium Larger Crossing
		\$12	Unused Trk.	\$650	Steel 60-80'	\$500,000	
				\$900	Steel 80-120'	\$8,000	Farm/Private
Excavation (Per Cy)		Retire Turnouts (Each)		Walls (Per Sf)			
\$12	Earth	\$30,000	No. 8	\$75	11-20' MSE		
\$50	Rock	\$32,000	No. 10	\$65	2-10' Conc 10-20'		
		\$54,000	No. 15	\$120	Cant.		
		\$72,000	No. 20	\$180	20' + Cant.		
Fencing (Per Lf)		Turnouts (Each)					
\$20	8' CLF	\$85,000	No. 8				
\$24	8' w/BW	\$95,000	No. 10				
\$40	Security	\$195,000	No. 15				
		\$235,000	No. 20				
		\$2,000,000	No. 32.7				
Ditching (Per Lf)		Additive For Complex Phasing					
\$8	2 ft. or less	Variable	20% to 150% of Trackwork Value				
\$12	2 to 4 feet						

3.3. Alternative 90B and 110

Alternatives 90B and 110 encompass a combination of new and existing right-of-way requirements. For these alternatives, a more in-depth analysis was performed to capture as many potential costs as possible. For example, property acquisitions, highway relocations, retaining walls and an additive for complex phasing are a few examples of items quantified for Alternatives 90B 110. These costs have been totaled on a per-mile basis. For a complete list of items quantified, refer to Exhibit C-4 —Unit Cost Assumptions for All Alternatives.

3.3.1. Engineering Cost Estimate Methodology and Assumptions for Alternative 125

The estimating methodology described in Section V. *Engineering Cost Estimate Methodology and Assumptions: 90 and 110* was used as a basis for cost estimating Alternative 125. However, since mile-by-mile infrastructure quantities were not developed, the work items associated with constructing the alternatives were aggregated into the following broad categories: Right-of-way; Roadbed, Drainage, Access & Security; Structures; Track and Systems; Yards and Shops; and Station Improvements, as shown in Exhibit C-4 —Unit Cost Assumptions for All Alternatives.

3.3.2. Additional Details on Selected Estimate Items

Property Acquisitions.

Due to the geographically extensive occurrence of property acquisition under both alternatives, five *land* categories were established: Prime City, Town, Suburban, Farmland and Marsh, to each of which was assigned a per-acre cost. With regard to *building* acquisition, three distinct categories were developed: Business, Residence, and Outbuilding. The costs were then assigned using a dollars-per-square-foot-(SF)-of-building-size factor based on the building footprint.

Additive for Complex Track Construction Phasing.

Various locations along the corridor will require complex construction phasing plans to maintain existing freight and passenger service during construction. An additional cost ranging from 20 percent to 150 percent of the standard trackwork cost, was assigned based on expected complexity.

Status of PTC

CSXT is in the early stages of implementing a PTC system for the Empire Corridor, having filed an Implementation Plan with the FRA. If additional tracks are implemented for passenger-only operation at speeds exceeding 90 mph, they will be required to include PTC. Therefore, capital costs for Alternatives 90, 110 and 125 include the cost of PTC on all new (and assumed to be dedicated passenger) mainline tracks. The cost of PTC implementation on existing CSXT track is the responsibility of CSXT, however, and is not included in the Tier 1 EIS capital cost estimates.

4. Constructability and Phasing Implications

4.1. Constructability and Phasing Implications for Alternatives 90 and 110

The following section has been prepared pursuant to the Program Scope to identify the optimal sequencing of construction staging in order to verify constructability. It also documents the operational implications of track outages and temporary speed restrictions. This has been done for the following two improvement scenarios:

- 1) Construction of new passenger mainline tracks adjacent to existing mixed use mainlines
 - a. Example chosen from Alternative 90mph - MP 204 to MP 215
- 2) Construction of proposed flyover
 - a. Example chosen from Alternative 110mph - MP 278 to MP 281

4.1.1. Example 1 – New Passenger Mainline Tracks in Alternative 90mph - MP 204 to MP 215

Major Construction Components

The track work proposed in Alternative 90mph between MP 204 and MP 215 consists primarily of the following:

- Approximately 12 miles of new dedicated passenger track (3rd track)
- Approximately 10 miles of new dedicated passenger track (4th track/second main)
- Installation of two new No. 32.75 turnouts
- Approximately three miles of existing freight siding realignments
- Installation of four new No. 20 crossovers
- Reconfiguration of four existing freight turnouts
- Rehabilitation\Extension of six Under Grade Bridges to accommodate the 3rd and 4th tracks
- Rehabilitation\extension of existing culverts to accommodate 3rd and 4th tracks, as well as relocated freight siding and potential service road
- One major curve geometry realignment and associated earth work
- Two minor curve geometry realignments

- One public railroad-highway grade crossing reconstruction
- Fifteen private grade crossings
- Up to 12 miles of service road construction.

Construction Phasing/Sequencing Considerations

All construction activities along the Empire Corridor shall be sequenced and phased to minimize negative impact on existing freight and passenger services. Additional consideration and planning will need to occur outside this Tier 1 analysis to ensure minimal delays and impacts on service. Some noteworthy items that need further investigation in Tier 2 are highlighted below:

- Determine whether existing under grade bridge bays can be reused for the proposed tracks or if the bridges need to be extended;
- Determine whether the existing overhead bridge can accommodate the proposed tracks without modifications;
- Determine the type of grade crossing protection to be required at both the public and private crossing;
- Determine the length and times work windows can be obtained for work near existing mainlines and track tie-ins;
- Determine property acquisition requirements; and
- Identify construction vehicle access points and obtain construction easements.

Potential Construction Sequencing

There are numerous construction sequences that would allow for the construction of the proposed program. One of those logical construction sequences is detailed below:

- Obtain construction access easements and prepare the subgrade up to the clearance limits allowed, while still maintaining existing service;
- Extend culverts as necessary;
- Extend/modify existing under grade bridges to accommodate proposed tracks;
- Finish preparing subgrade up through and including tie-in points. Coordinate work windows;
- Install crossovers from existing mainline to relocated freight tracks to maintain service;
- Build as much of the relocated freight track in the clear. Tie the ends back to existing track over a work window, potentially without service delays;
- Remove existing freight track no longer in service;

- Build passenger tracks up to tie-in points;
- Initiate grade crossing work;
- Staged signal installation and testing to occur throughout construction; and
- Finalize track and signal tie-ins.

4.1.2. Example 2 – Proposed Flyover in Alternative 110mph - MP 278 to MP 281

Major Construction Components

The track work proposed in Alternative 110mph between MP 278 and MP 281 is a grade separated overhead bridge and consists of primarily of the following:

- Approximately two miles of new dedicated passenger track (3rd track)
- Approximately four miles of rehabilitated passenger track (3rd and 4th track)
- Installation of one new No. 32.75 turnout
- Approximately nine miles of existing freight mainline realignments
- Installation of three new No. 20 crossovers
- Installation of one new No. 20 turnout
- Construction of retaining walls and Bridge Structure
- Rehabilitation\extension of three Under Grade Bridges
- Rehabilitation\extension of existing culverts
- One major curve geometry realignment and associated earth work
- Two minor curve geometry realignments
- Two public railroad-highway grade crossing reconstruction
- Two private grade crossings
- Up to two miles of service road construction

Construction Phasing/Sequencing Considerations

All construction activities along the Empire Corridor shall be limited in their negative impact on existing freight and passenger services. Additional consideration and planning will need to occur outside this Tier 1 analysis to ensure minimal delays and impacts on service. Some noteworthy items that need further investigation in the Tier 2 are highlighted below:

- Determine if the existing under grade bridge bays can be reused for the proposed tracks or if the bridges need to be extended;
- Due to the large quantity of existing mainline relocations through this area, take great care to build as much of the new track while the existing mainlines stay in service. Minimize cutover and tie-in limits and complete within the allowable work windows;

- Determine the type of grade crossing protection required at both the public and private crossings;
- Determine the length and times work windows can be obtained for work near existing mainlines and track tie-ins;
- Identify property acquisition; and
- Finalize construction vehicle access points and obtain temporary construction easements.

Potential Construction Sequencing

There are many different construction sequences that would allow for the construction of the proposed program. One of those logical construction sequences is detailed below:

- Obtain construction access easements and prepare the subgrade up to the clearance limits allowed – while still maintaining existing service. This includes retained fill areas approaching the bridge structure;
- Build new sections of track up to the clearance limits allowed;
- Tie-in the new freight track ends with the existing mainlines;
- Build the bridge structure and remaining retaining walls;
- Install remaining new passenger track;
- Initiate grade crossing work; and
- Finalize signal installation and testing to occur throughout construction.

4.2. Constructability and Phasing Implications for Alternative 125

The constructability and phasing implications of the very high speed corridor alternatives differ considerably from the alternatives that construct and modify track on the existing CSXT/Amtrak/Metro-North railroad corridors. In general, these differences are as follows:

Advantages

- Reduced need for freight railroad Roadway Worker Protection (RWP) support during construction;
- Eliminated or reduced complexity of staging modifications to active freight tracks;
- Eliminated conflicts with existing industrial and branch lines; and
- Eliminated complexity of expanding/modifying existing at-grade roadway crossings.

Disadvantages

- Increased permitting and remediation requirements;
- Significantly greater right-of-way acquisition for both right-of-way and for new power distribution substations and power line towers;
- No potential for re-use of previously-constructed four-track right-of-way; and
- Increased need for construction and management-related infrastructure and institutional processes.

Appendix D Rail Network Operations Simulation

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1. Executive Summary

As part of the High Speed Rail Empire Corridor Program, detailed rail operations simulations were developed to model the alternatives and compare them against the future Base Alternative. The simulation analyses show that the four Empire Corridor “Build” alternatives are operationally feasible with highly acceptable passenger train schedule adherence and fluid freight operations. The dedicated third track alternatives (Alternatives 90B and 110) as well as the dedicated high speed corridor (Alternative 125) perform best, although the in-corridor improvements of Alternative 90A also support a much higher level of passenger service with only modest additional freight train congestion. All four Build alternatives produce simulated on-time performance results of 90 percent or better (based on 10 minute lateness thresholds at terminal end points). On-time performance is measured with respect to train schedules, which include successively shorter scheduled trip times as the maximum speed of each alternative increases.

Average passenger train speed in the simulations (including intermediate station stops) increases as the maximum speed of each alternative increases. Passenger train delay (in terms of minutes of train delay per 100 passenger train-miles operated) shows improvement with the Base Alternative (No Action) infrastructure and significantly greater improvement with the Build alternatives.

The Average Train Lateness statistic decreases with the Build improvements, though Alternative 125 has somewhat greater train lateness than the others. This is because Alternative 125 includes not only a new two-track electrified high speed rail line (with virtually no delays) but “legacy” service of four round trips per day on the existing Empire Corridor with only the Base Alternative infrastructure improvements. It is congestion on the existing corridor that accounts for the train arrival lateness in Alternative 125.

In terms of freight train average speed, the passenger-focused capital improvements in the Base Alternative provide ancillary benefits to freight train operation. Average speed increases from 27.4 to 30.3 MPH, both as a result of the Base Alternative improvements and CSXT’s emphasis on future intermodal service growth. Comparing the Base Alternative with the four “Build” alternatives (where freight operating volumes were held constant across all five simulations), Alternative 90A shows some degradation in freight train average speed while the other alternatives are the same or better than the Base Alternative.

Including future CSXT growth, freight train delay (minutes of delay per 100 miles operated) remains unchanged in both the existing and Base Alternative simulations. Comparing the Base Alternative versus the Build alternatives, Alternative 90A shows increased delays while the other alternatives have the same delay or reduced delay. This analysis was performed prior to the final definition of the Base Alternative. As simulated, the Base Alternative included the Rochester Area Third Track (CP 382 to CP 393) that provides freight capacity benefits. With this project no longer included in the Base Alternative, its freight performance is likely somewhat degraded. This means that Alternative 90A may no longer show increased freight delays versus the Base Alternative.

Corridor average travel times between Selkirk Yard and Buffalo improve from 9:17 in the Current (2008) simulation to 8:14 in the simulation of the Base Alternative due to capacity improvements on the line and the increased prevalence of higher performance intermodal trains. The average freight train trip increases slightly to 8:23 in Alternative 90A; the other three “Build” alternatives have identical or superior freight trip times compared with the Base Alternative. As was noted above, the final definition of the Base Alternative likely results in Alternative 90A freight average travel times comparable to the Base.

This appendix details the development of operating plans for the alternatives developed for the High Speed Empire Corridor Program Tier 1 Draft EIS and presents the rail operations network simulations analysis for these alternatives. The operating plans have been developed for the entire Empire Corridor rail network between Niagara Falls and New York City. For the Empire Corridor West, between Niagara Falls and Albany-Rensselaer, new network simulations were developed. For the Empire Corridor South, between Albany-Rensselaer and New York City, network simulations and results previously developed as a part of the 2005 *Hudson Line Corridor Railroad Transportation Plan* were utilized for this program.

This document summarizes operating plans for existing operations and the five alternatives developed as a part of this program including:

1. Existing Conditions based on 2008 Operations
2. Base Alternative
3. Alternative 90A – Trips operate over an upgraded existing corridor at a maximum of 90 MPH
4. Alternative 90B – Trips operate over the corridor using a designated “passenger only” track and long passing sidings/sections of double “passenger only” track) with a maximum speed of 90 MPH,
5. Alternative 110 – Trips operate over the corridor using a designated “passenger only” track and long passing sidings/sections of double “passenger only” track) with a maximum speed of 110 MPH
6. Alternative 125 – Trips operate over the existing corridor and also over a new double track electrified line that parallels the existing corridor with a maximum speed of 125 MPH.

Existing conditions are based on 2008 operations, rather than more recent data, because Empire Corridor freight volumes declined significantly in the 2009-2010 timeframe due to the economic downturn. From 1990 through 2008, CSXT experienced daily train growth at an annualized rate of 2.96 percent. From 2008 to 2009, CSXT train volume system-wide fell by about 13 percent. CSXT traffic levels are expected to recover over the next several years as the economy improves, leading to the selection of 2008 volumes as representative of current train volumes absent the impact of the economic downturn. Exhibit D-1 shows a velocity profile comparison of a single train traveling from Schenectady to Buffalo. The 79, 90 and 110 plots reflect dedicated third track alignments, rather than travel on the existing shared use passenger/freight tracks. Alternative 125 shows the higher performance of an electrified dedicated high speed rail line.

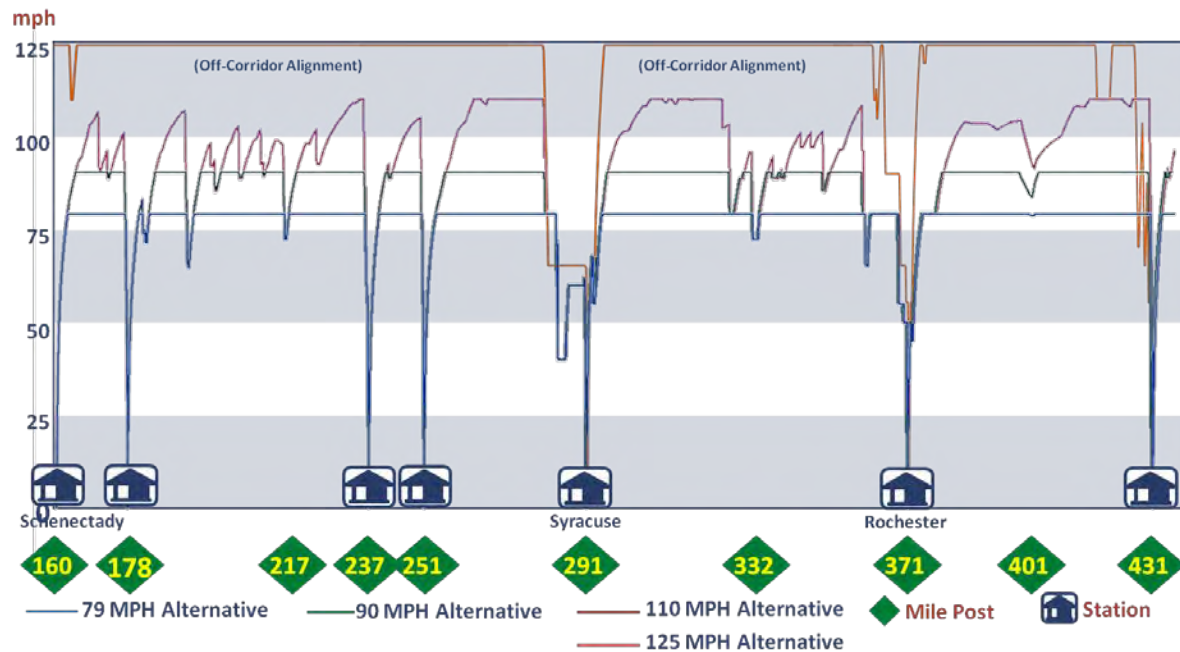
Exhibit D-1 - Simulated Velocity Profiles of Trains in Alternatives 79C, 90B, 110 and 125

Exhibit D-2 provides a comparison of trip times from New York City to cities along the corridor for each of the operating plans. The travel times for current (2008) and Base Alternative operations are virtually the same; only “Current” values are shown. With the exception of the current operating plan, results indicate reduced trip times for each successive plan.

Exhibit D-2 - Operating Plan Trip Time Comparisons From New York City

To:	Alternative					
	Base	90A*	90B	110	125 Express	125 Regional
Albany	2:30	2:13	2:13	2:13	2:15	2:19
Schenectady	3:06	2:53	2:47	2:50		2:59
Amsterdam	3:15	3:01	3:04	3:03		3:07
Utica	4:23	4:13	3:55	3:51		4:19
Rome	4:29	4:15	4:07	4:02		4:24
Syracuse	5:24	4:51	4:48	4:42	3:39	5:24
Rochester	6:41	6:06	5:55	5:45	4:25	6:42
Buffalo Depew	7:45	7:04	6:48	6:34		
Buffalo Exchange Street	7:49	7:06	6:57	6:45	5:10**	7:52
Niagara Falls	9:06	8:08	7:36	7:22	6:02***	8:40

Note: All speed values refer to maximum passenger train speed between Schenectady and Niagara Falls. All alternatives will operate at speeds up to 110 MPH between Albany-Rensselaer and Schenectady, 125 MPH for Alternative 125, as well as between Albany-Rensselaer and Hudson.

* Note 1: Based on average of express and local services

** Note 2: New station just south of Buffalo Exchange

*** Note 3: Via shuttle train from Buffalo; through service from NY also operated.

Exhibit D-3 provides a comparison of trip times from Albany to Empire Corridor West destinations for each of the operating plans. With the exception of the current (2008) operating plan, results indicate reduced trip times for each successive plan.

Exhibit D-3 - Operating Plan Trip Time Comparisons from Albany

To:	Alternative					
	Base	90A*	90B	110	125 Express	125 Regional
Schenectady	0:18	0:18	0:17	0:17		0:19
Amsterdam	0:35	0:35	0:34	0:33		0:36
Utica	1:33	1:33	1:21	1:17		1:36
Rome	1:48	1:49	1:37	1:32		1:53
Syracuse	2:34	2:22	2:14	2:08	1:14	2:42
Rochester	3:51	3:38	3:21	3:11	2:00	3:59
Buffalo Depew	4:55	4:35	4:14	4:00		
Buffalo Exchange Street	5:09	4:47	4:27	4:15	2:45**	5:09
Niagara Falls	6:26	5:48	5:06	4:52	3:37***	6:08

Note: All speed values refer to maximum passenger train speed between Schenectady and Niagara Falls. All Alternatives will operate at speeds up to 110 MPH between Albany-Rensselaer and Schenectady, as well as between Albany-Rensselaer and Hudson.

* Note 1: Based on average of express and local services

** Note 2: New Station just south of Buffalo Exchange.

*** Note 3: Via shuttle train from Buffalo; through service from NY also operated.

An analysis of fleet needs for each alternative provides data on the number of trainsets required to meet service levels included in each alternative's operating plan. A spare factor of 20 percent is included in all current and future fleet needs, reflecting industry standard allowance for rolling stock in need of repair, undergoing repair, or undergoing long-term heavy overhaul. The total and incremental trainset requirements are shown in Exhibit D-4. The Base Alternative has the same rolling stock requirement as current operations. Alternatives 90A, 90B and 110 each require six additional train sets, while Alternative 125 (with a richer level of service than the others) requires 17 additional train sets.

Exhibit D-4 - NYSDOT Empire Corridor Fleet Needs

	2008 Current		2035 Base Alternative		2035 Alt 90A		2035 Alt 90B		2035 Alt 110		2035 Alt 125	
	Required	Incremental	Required	Incremental	Required	Incremental	Required	Incremental	Required	Incremental	Required	Incremental
Start Location												
Albany	6	0	6	0	6	0	7	1	7	1	6	0
Niagara Falls	2	0	2	0	5	3	5	3	5	3	2	0
New York (Sunnyside Yard)	2	0	2	0	4	2	3	1	3	1	2	0
Rutland	1	0	1	0	1	0	1	0	1	0	1	0
Montreal	1	0	1	0	1	0	1	0	1	0	1	0
Toronto	1	0	1	0	1	0	1	0	1	0	1	0
Buffalo (Dual Mode)											8	8
New York (Dual Mode)											6	6
TOTAL (Before Spares)	13	0	13	0	18	5	18	5	18	5	27	14
Spare Factor	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
TOTAL (With Spares)	16	0	16	0	22	6	22	6	22	6	33	17

Exhibit D-5 summarizes the rail network simulation results with respect to passenger service between Albany-Rensselaer and Niagara Falls. On-time performance is based on a 10-minute lateness threshold at end terminal points and includes not only the Empire Corridor service but the Amtrak *Adirondack* and *Ethan Allen Express* services that operate on the corridor between New York, Albany-Rensselaer and Schenectady. On-time performance is measured with respect to train schedules, which include successively shorter scheduled trip times as the maximum speed of each alternative increases.

Exhibit D-5 - Simulated Results – Passenger Trains

Simulation	2008 Current	2035 Base Alt	2035 Alt 90A	2035 Alt 90B	2035 Alt 110	2035 Alt 125
Passenger train on-time performance (%) ⁽¹⁾	47.6%	83.0%	92.4%	95.4%	94.9%	96.4%
Average speed (MPH)	50.53	51.21	57.19	62.64	65.72	67.86 ⁽²⁾
Delay (Minutes per 100 Miles Operated)	7.47	1.75	1.87	0.34	0.11	0.45 ⁽³⁾
Average Train Lateness ⁽⁵⁾	27.73	7.14	3.72	0.87	0.84	2.11 ⁽⁴⁾

(1) Based on 10 minute lateness threshold.

(2) Figure represents the average of both conventional and high speed trains. Conventional trains average 51 MPH while High Speed Trains average 74 MPH.

(3) Figure represents the average of both conventional and high speed trains. Conventional trains average 1.75 delay-minutes per 100 miles operated while High Speed Trains (on a dedicated two-track corridor) experience no delay.

(4) Figure represents the average of both conventional and high speed trains. Conventional trains average 7.14 minutes of lateness while High Speed Trains (on a dedicated two-track corridor) experience no lateness.

(5) No credit for early train arrivals.

Average passenger train speed in the simulations (including intermediate station stops) increases as the maximum speed of each alternative increases. Passenger train delay (in terms of minutes of train delay per 100 passenger train-miles operated) shows improvement with the Base Alternative infrastructure and significantly greater improvement with the Build alternatives.

The Average Train Lateness statistic in Exhibit D-5 decreases with the Build improvements, though Alternative 125 has somewhat greater train lateness than the others. This is because Alternative 125 includes not only a new two-track electrified high speed rail line (with virtually no delays) but “legacy” service of four round trips per day on the existing Empire Corridor with only the Base Alternative infrastructure improvements. It is congestion on the existing corridor that accounts for the average 2.11 minutes arrival lateness in Alternative 125.

Exhibit D-6 summarizes the freight train performance over the corridor under the current, Base Alternatives and future “Build” alternatives, including average speed, train-minutes of delay per 100 miles operated and average trip times. The average trip times include point-to-point times for those freight trains operating between Selkirk Yard (southwest of Albany), Syracuse and Buffalo, as well as standard deviation statistics. These statistics reflect the “spread” of the individual average trip times in the simulation; the lower the number, the more reliable the freight service. This is an important consideration for CSXT’s intermodal (trailer on flat car and container on flat car) services because the railroad has numerous contracts with customers that include incentive payments for consistent on-time performance.

Exhibit D-6 - Simulated Freight Trip Time Statistics and Reliability – All Alternatives

		2008 Current	2035 Future	2035 Alt 90A	2035 Alt 90B	2035 Alt 110	2035 Alt 125
Average Speed		27.4	30.3	29.4	31.1	30.8	30.3
Delay per 100 Miles Operated		36.83	36.31	42.10	32.78	34.95	36.31
Selkirk - Syracuse	Average Trip Time	4:43:58	4:14:33	4:11:12	3:49:54	3:57:39	4:14:33
	Standard Deviation	1:39:28	1:20:34	1:21:22	1:03:00	1:17:32	1:20:34
Syracuse - Buffalo	Average Trip Time	4:34:25	4:11:14	4:31:35	4:25:20	4:40:11	4:11:14
	Standard Deviation	1:58:25	0:57:51	0:54:38	0:57:25	1:37:34	0:57:51
Syracuse - Selkirk	Average Trip Time	4:58:34	4:06:31	3:55:31	4:09:00	4:09:31	4:06:31
	Standard Deviation	1:54:59	1:15:07	1:04:27	1:32:33	1:58:42	1:15:07
Buffalo - Syracuse	Average Trip Time	4:27:26	4:04:16	4:04:20	4:17:19	4:11:11	4:04:16
	Standard Deviation	1:41:11	1:22:23	1:20:26	1:46:01	1:23:48	1:22:23
Selkirk - Buffalo (Both Dir.)	Average Trip Time	9:06:55	8:13:39	8:23:18	8:09:14	8:03:41	8:13:39
	Standard Deviation	2:19:39	1:37:01	2:04:26	1:50:52	1:39:20	1:37:01

In terms of average speed, the passenger-focused capital improvements in the Base Alternative provide ancillary benefits to freight train operation as well. Average speed increases from 27.4 to 30.3 MPH, both as a result of the Base Alternative improvements and CSXT’s emphasis on future intermodal service growth. Comparing the Base Alternative with the four “Build” alternatives (where freight operating volumes were held constant across all five simulations), Alternative 90A shows some degradation in freight train average speed while the other alternatives are the same or better than the Base Alternative for this metric. This analysis was performed prior to the final definition of the Base Alternative. As simulated, the Base Alternative included the Rochester Area Third Track (CP

382 to CP 393) that provides freight capacity benefits. With this project no longer included in the Base Alternative, its freight performance is likely somewhat degraded. This means that Alternative 90A may longer show increased freight delays or decreased average speed versus the Base Alternative.

Including future CSXT growth, freight train delay (minutes of delay per 100 miles operated) remains unchanged in both the existing and Base Alternative simulations. Comparing the Base Alternative and the Build alternatives, Alternative 90A shows increased freight train delays while the other alternatives have the same delay or reduced delay.

Corridor travel times between Selkirk Yard and Buffalo are also shown in Exhibit D-6. The 2008 average trip time of 9:17 drops to 8:14 in the simulation of the Base Alternative due to capacity improvements on the line and the increased prevalence of higher performance intermodal trains. The average freight train trip over the entire corridor (both directions) increases slightly to 8:23 in Alternative 90A; the other three “Build” alternatives have identical or shorter (faster) freight trip times compared with the Base Alternative.

2. Methodology

2.1. Simulation Software

The single train passenger trip time simulations used to build the alternatives’ operating plans are based on the TrainOps® Rail Simulation Software from LTK. The multiple train network simulations used to evaluate the performance of the alternatives use the Rail Traffic Controller (RTC) software from Berkeley Simulation Software. RTC simulations were processed for seven days, plus one “warm up” day and one “cool down” day. The “warm up” day is used to populate all of the trains in the network, ensuring that, when output statistics are generated for the seven day period, the corridor is operating with trains from end to end.

The RTC model includes all of the corridor trackage between Albany-Rensselaer and Niagara Falls, as well as connecting lines and branches. A companion simulation model, developed for the Hudson Line Railroad Corridor Transportation Plan, was used previously to model the corridor trackage between Albany-Rensselaer and New York City. The Transportation Plan was completed in 2005 as the “blueprint” for improvements to the Hudson Line corridor between Albany and New York and reflects the technical leadership of NYSDOT, Metro-North, Amtrak, CSXT Transportation and Canadian Pacific Railway. With corridor improvements organized into short, medium and long term projects, the long-term improvements will support a New York-Albany 2:15 trip time with five stops, a 15 minute trip time improvement compared to the existing schedule).

In order to assure the network simulation accurately represents conditions on the Empire Corridor; New York State Department of Transportation and CSXT have agreed that CSXT will review and assist NYSDOT in the network simulations associated with this program. This allows CSXT transportation planners and operations managers to comment on the dispatching reflected in the model and to identify changes to better represent “real world” operations. The Empire Corridor West model for the Base Alternative (No Action) has been reviewed by CSXT and the final simulation model used in the analysis includes simulation model clarifications suggested by CSXT’s modeling experts:

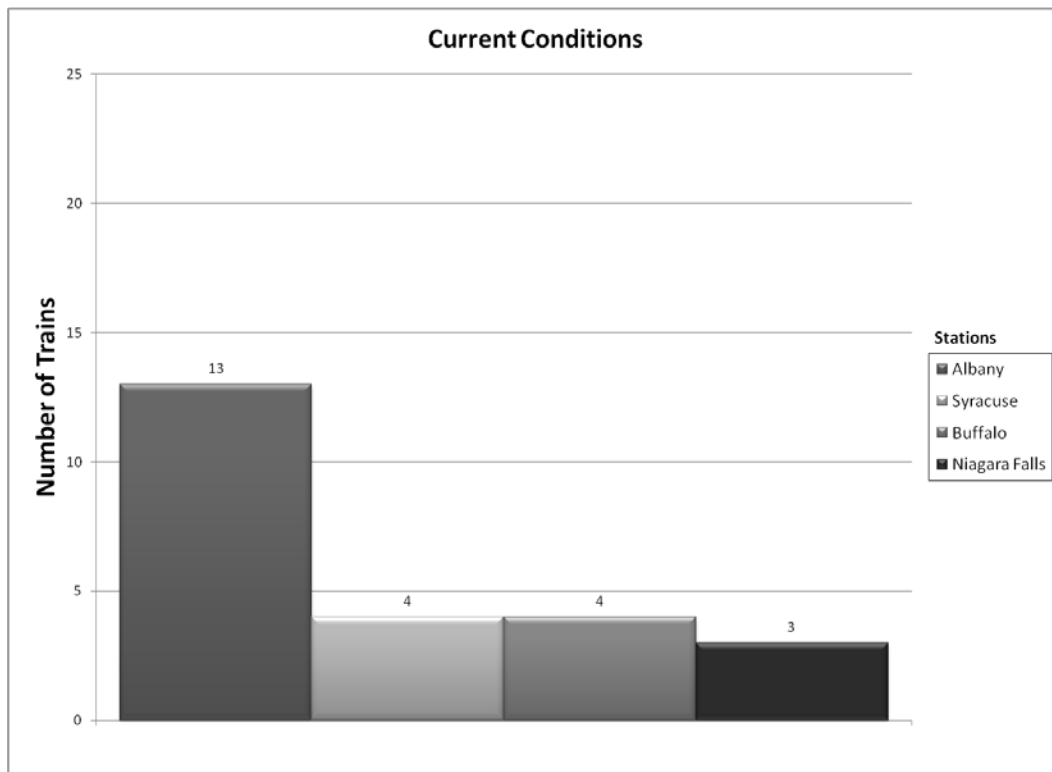
- Extended yard leads,
- Greater Canadian Pacific Railways operating detail (Delanson-Schenectady-Saratoga),
- Updates to baseline CSXT operating plan,
- Additional detail on Norfolk Southern movements over CSXT in Buffalo,
- Additional detail on Mohawk, Adirondack & Northern movements over CSXT near Utica.

Additional review comments from CSXT are expected as a result of its review of the “Future Build” simulation models.

2.1.1. Future Passenger Train Service

This section includes a description of each alternative, along with supporting timetables and trip travel times. Additional data is provided in Exhibit D-7 through Exhibit D-11 indicating the number of train trips originating in New York City under each of the alternative’s operating plans, specified in terms of daily round trips.

Exhibit D-7 - 2008 Existing – Number of Trains Originating from New York City and Servicing Other Stations



The Base Alternative has the same number of passenger train round trips per day as current conditions, as shown in Exhibit D-8.

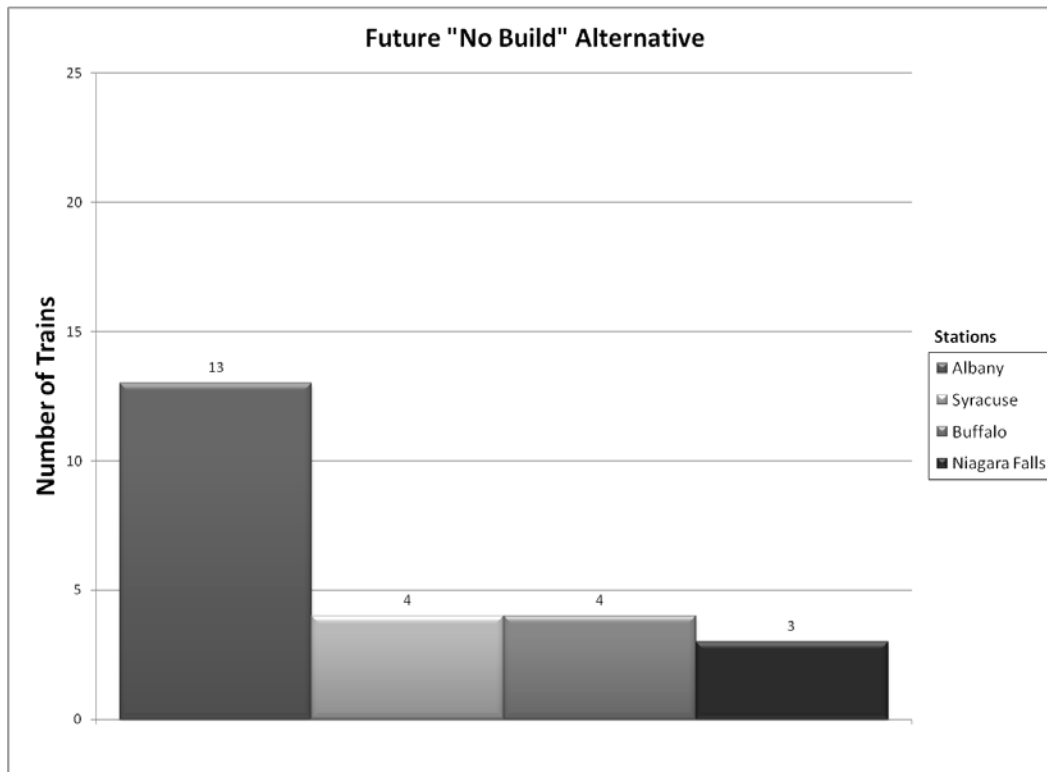
Exhibit D-8 - 2035 Base Alternative– Number of Trains Originating from New York City and Servicing Other Stations

Exhibit D-9 displays Alternative 90A train volumes serving New York City. Service to Albany increases from the present 13 round trips to 16 round trips, while service from New York to Buffalo increases from the present 4 round trips to 7 round trips (an 8th frequency is also added, but it originates westbound in Albany). Alternatives 90B and 110 (Exhibit D-10) train volumes are virtually the same as Alternative 90A. Alternative 125 has the highest scheduled train volumes, as shown in Exhibit D-11.

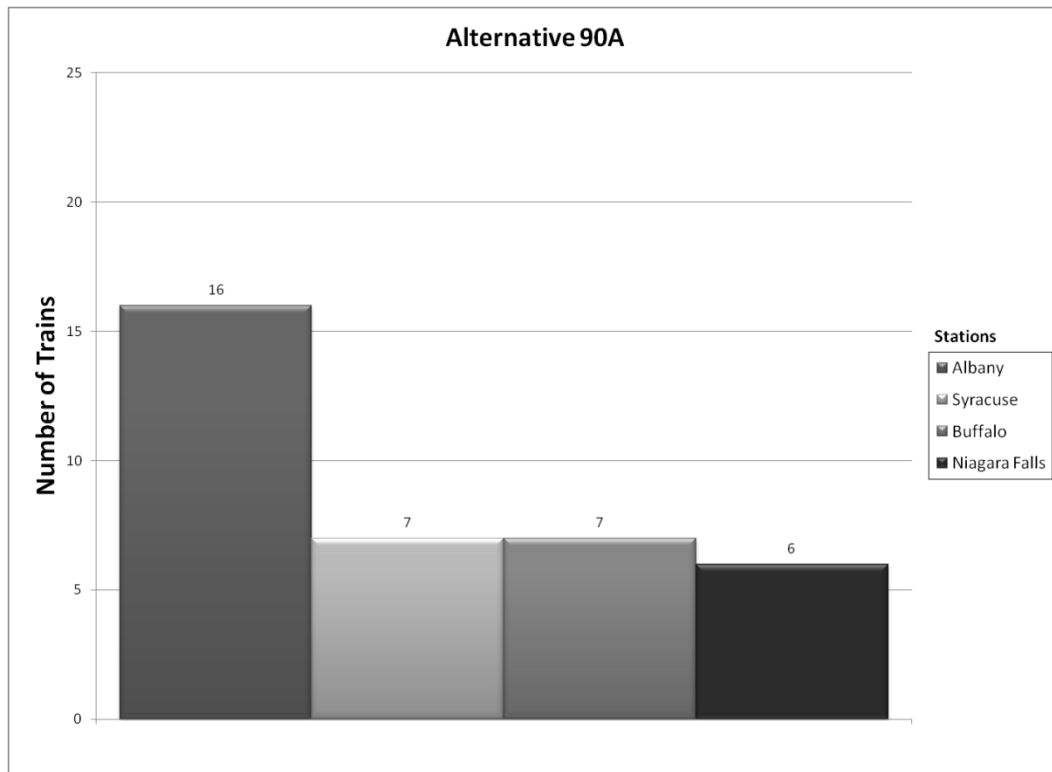
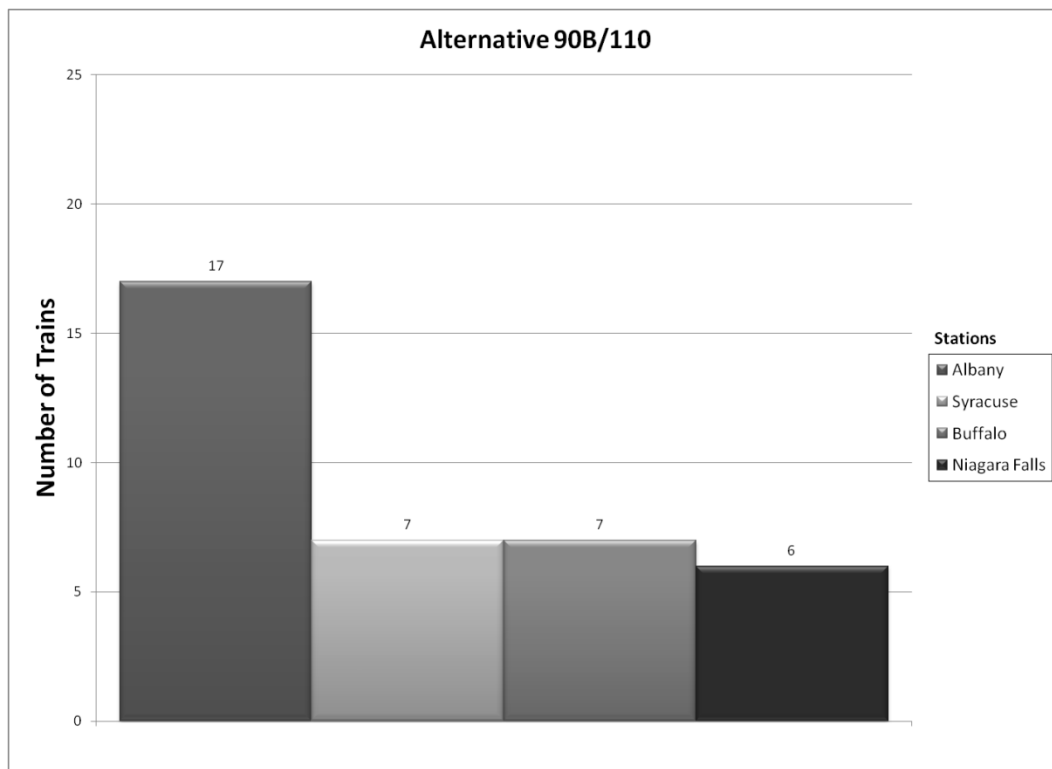
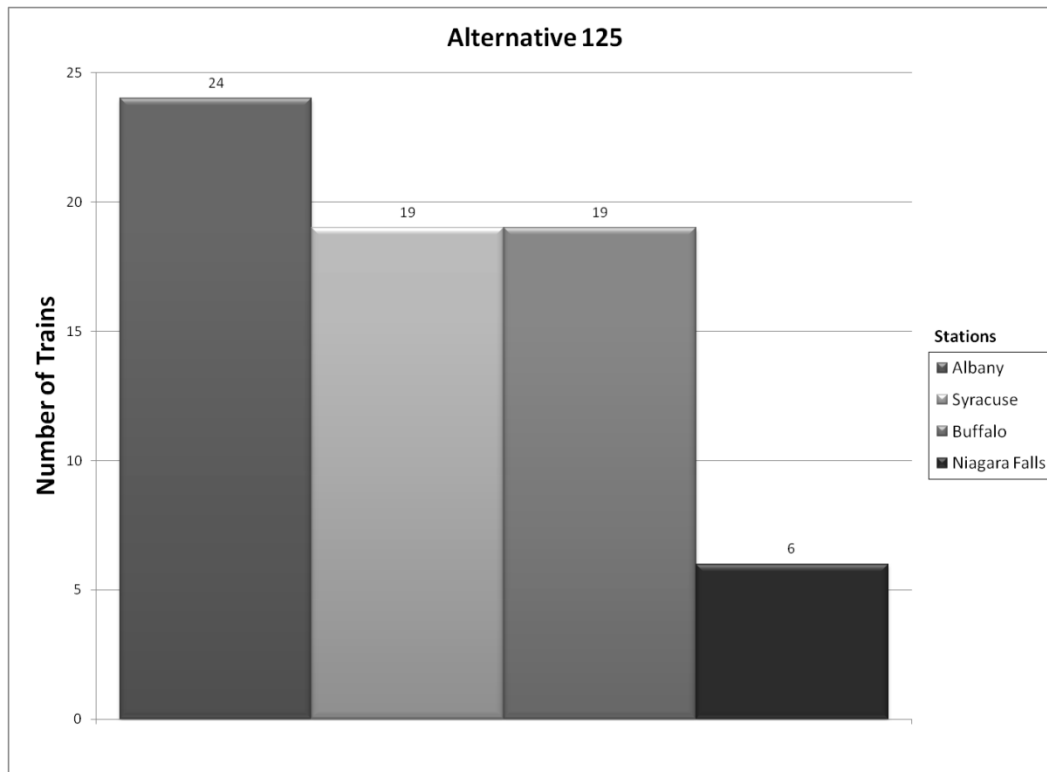
Exhibit D-9 - 2035 Alternative 90A – Number of Trains Originating from New York City and Servicing Other Stations**Exhibit D-10 - 2035 Alternative 90B/110 – Number of Trains Originating from New York City and Servicing Other Stations**

Exhibit D-11 - 2035 Alternative 125 – Number of Trains Originating from New York City and Servicing Other Stations

2.1.2.2008 Existing Operations

Current (2008) scheduled service on the Empire Corridor shows a range of scheduled travel times between cities along the route. Exhibit D-12 provides a sample of running times for trips along with the eastbound and westbound timetables provided in Exhibit D-13 and Exhibit D-14. Trains 48 and 49, highlighted in yellow in the tables, are the long-distance Amtrak *Lake Shore Limited* between New York and Chicago. This train does not carry local passengers between New York, Albany-Rensselaer and intermediate points.

Exhibit D-12 - Scheduled Trip Times – Existing Operations (October 27, 2008)

From/To:	280 ExSun	284 Daily	64 Daily	288 Sun only
Niagara Falls-Albany	5:45	5:50	6:15	6:50
Niagara Falls-New York	8:35	8:35	9:00	9:35
Buffalo Depew-Albany	4:55	5:00	5:25	6:00
Buffalo Depew-New York	7:45	7:45	8:10	8:45
Buffalo Exchange-Albany	5:10	5:15	5:40	6:15

Exhibit D-13 - Scheduled Current Conditions – Eastbound Timetable (October 27, 2008)

Stations		Trains									
		280 - ExSun	290 - Mon-Fri	284 - ExSun	292 - Sat only	286 - Sun only	48 - Daily	68 - Daily	64 - Daily	296 - Sun only	288 - Sun only
Dep	Montreal										
Dep	Plattsburgh										
Dep	Rutland										
Dep	Saratoga		9:43 AM		12:43 PM			3:53 PM		6:57 PM	
Dep	Niagara Falls (New Station)										
Dep	Niagara Falls (Current Station)	4:00 AM		7:00 AM		8:50 AM			12:35 PM		2:00 PM
Arr	Buffalo										
Dep	Exchange Street	4:35 AM		7:35 AM		9:25 AM			1:10 PM		2:35 PM
Arr	Buffalo Depew										
Dep	Buffalo Depew	4:50 AM		7:50 AM		9:40 AM	9:35 AM		1:25 PM		2:50 PM
Arr	Rochester										
Dep	Rochester	5:47 AM		8:47 AM		10:37 AM	10:43 AM		2:27 PM		3:57 PM
Arr	Syracuse										
Dep	Syracuse	7:05 AM		10:05 AM		11:55 AM	12:11 PM		3:50 PM		5:30 PM
Arr	Rome										
Dep	Rome	7:45 AM		10:45 AM		12:35 PM			4:35 PM		6:10 PM
Arr	Utica										
Dep	Utica	8:02 AM		11:02 AM		12:52 PM	1:17 PM		4:57 PM		6:34 PM
Arr	Amsterdam										
Dep	Amsterdam	9:00 AM		12:00 PM		1:49 PM			5:55 PM		7:35 PM
Arr	Schenectady										
Dep	Schenectady	9:20 AM	10:23 AM	12:20 PM	1:15 PM	2:10 PM	2:55 PM	4:50 PM	6:15 PM	7:28 PM	8:15 PM
Arr	Albany-	9:45 AM	10:50 AM	12:50 PM	1:45 PM	2:50 PM	3:40 PM	5:40 PM	6:50 PM	7:50 PM	8:50 PM
Dep	Rensselaer	10:05 AM	11:05 AM	1:05 PM	2:05 PM	3:05 PM	4:50 PM	6:05 PM	7:05 PM	8:05 PM	9:05 PM
Arr	Hudson										
Dep	Hudson	10:30 AM	11:30 AM	1:30 PM	2:30 PM	3:30 PM	5:16 PM	6:30 PM	7:30 PM	8:30 PM	9:30 PM
Dep	Rhinecliff	10:51 AM	11:51 AM	1:51 PM	2:51 PM	3:51 PM	5:43 PM	6:51 PM	7:51 PM	8:51 PM	9:51 PM
Dep	Poughkeepsie	11:06 AM	12:06 PM	2:06 PM	3:06 PM	4:06 PM	5:55 PM	7:06 PM	8:06 PM	9:06 PM	10:06 PM
Dep	Croton-Harmon	11:45 AM	12:45 PM	2:45 PM	3:45 PM	4:45 PM	6:35 PM	7:45 PM	8:45 PM	9:45 PM	10:45 PM
Dep	Yonkers		1:04 PM	3:04 PM	4:04 PM	5:04 PM		8:04 PM	9:04 PM	10:04 PM	
Arr	New York	12:35 PM	1:35 PM	3:35 PM	4:35 PM	5:35 PM	7:25 PM	8:35 PM	9:35 PM	10:35 PM	11:35 PM

Exhibit D-14 - Current Conditions – Westbound Timetable (October 27, 2008)

Stations		Trains								
		63 -- Daily	69 -- Daily	281 -- Daily	283 -- Mon-Fri	285 -- SaSu	291 -- ExFri	49 -- Mon-Fri	49 -- SaSu	293 -- Fri only
Dep	New York	7:15 AM	8:20 AM	10:20 AM	1:20 PM	2:20 PM	3:20 PM	4:00 PM	3:45 PM	5:45 PM
Dep	Yonkers	7:39 AM	8:44 AM		1:44 PM	2:44 PM	3:44 PM			
Dep	Croton-Harmon	7:58 AM	9:03 AM	11:01 AM	2:03 PM	3:03 PM	4:03 PM	4:43 PM	4:28 PM	6:26 PM
Dep	Poughkeepsie	8:37 AM	9:42 AM	11:40 AM	2:42 PM	3:42 PM	4:42 PM			7:10 PM
Dep	Rhinecliff	8:52 AM	9:57 AM	11:55 AM	2:57 PM	3:57 PM	4:57 PM			7:25 PM
Dep	Hudson	9:15 AM	10:20 AM	12:18 PM	3:20 PM	4:20 PM	5:20 PM			7:48 PM
Arr	Albany-	9:45 AM	10:50 AM	12:48 PM	3:50 PM	4:50 PM	5:50 PM	6:30 PM	6:15 PM	8:15 PM
Dep	Rensselaer	10:00 AM	11:05 AM	1:05 PM	4:05 PM	5:05 PM	6:05 PM	7:05 PM	7:05 PM	8:25 PM
Arr	Schenectady									
Dep		10:23 AM	11:29 AM	1:28 PM	4:28 PM	5:28 PM	6:29 PM	7:31 PM	7:31 PM	8:49 PM
Arr	Amsterdam									
Dep		10:40 AM			4:45 PM	5:45 PM				
Arr	Utica									
Dep		11:39 AM		2:42 PM	5:44 PM	6:44 PM		8:44 PM	8:44 PM	
Arr	Rome									
Dep		11:53 AM			5:58 PM	6:58 PM				
Arr	Syracuse									
Dep		12:40 PM		3:40 PM	6:45 PM	7:45 PM		9:41 PM	9:41 PM	
Arr	Rochester									
Dep		1:58 PM		5:00 PM	8:05 PM	9:05 PM		11:00 PM	11:00 PM	
Arr	Buffalo Depew									
Dep		2:56 PM		6:00 PM	9:05 PM	10:05 PM		11:59 PM	11:59 PM	
Arr	Buffalo									
Dep	Exchange Street	3:09 PM		6:15 PM	9:20 PM	10:20 PM				
Arr	Niagara Falls (Current Station)	4:10 PM		7:10 PM	10:20 PM	11:15 PM				
Dep	Saratoga		11:57 AM				6:57 PM			9:17 PM
Arr	Rutland									
Dep	Plattsburgh									
Arr	Montreal									

As part of the current conditions, analysis is provided in indicating the results of average scheduled speeds for the fastest trips between Niagara Falls and New York City and Buffalo to Albany as shown in Exhibit D-15.

Exhibit D-15 - Fastest Scheduled Trip Time Calculations

From/To:	Train Number	Trip Time (HH:MM)	Trip Time (Minutes)	Average Speed
Niagara Falls-New York	280	8:45	525	53
Buffalo Exchange-Albany	280	5:24	324	54

2.1.3. Base Alternative

The “Base Alternative” alternative assumes that only committed infrastructure improvements are made to the corridor and that train trips continue to operate at existing maximum speeds. This alternative’s operating plan is similar to current conditions, though a number of scheduled running time changes were made to reflect infrastructure changes on the corridor. These are shown in Exhibit D-16. Exhibit D-18 and Exhibit D-19 show the resultant operating plan; the train volumes are identical to those under current conditions.

Exhibit D-16 - 2035 Base Alternative and Associated Scheduled Adjustments

PROJECT	TRAINS	SCHEDULE ADJUSTMENTS
Albany-Rensselaer Station Improved signal and interlocking layout south of the station.	Westbound trains Approaching Albany-Rensselaer	Trip time from Hudson to Albany was reduced by 2 minutes.
	Eastbound trains departing Albany-Rensselaer	Current Albany departure times were maintained, and no adjustment was made to Albany-Hudson trip time. Trains accelerating do not suffer the same penalty as trains approaching the station. At this point, no analysis has been undertaken regarding any adjustments which might be necessary for trains arriving earlier at Poughkeepsie to fit with Poughkeepsie-Grand Central commuter trains.
Albany-Rensselaer Station Improved signal and interlocking layout north of the station.	All westbound trains All eastbound trains	Trip time between Albany-Rensselaer and Schenectady was reduced by two minutes.
Albany-Schenectady Double Track	Westbound trains continuing to the CPR	Trip time between Albany-Rensselaer and Schenectady reduced an additional one minute due to eliminating the need for a crossover move at Schenectady.
	Eastbound trains arriving from the CPR	No trip time adjustment. It was assumed that trains will still make a crossover move from Track 1 to Track 2 east of Schenectady Station.
	Carrying time savings north to/from CPR points	The time saved in Train 69 was carried through to Saratoga, but not to Plattsburgh or Montreal due to the meet with Train 68 at Howards. Time savings were also carried through to Rutland for northbound trains but not for southbound trains due to contractual issues and the meet between 291 and 296.
	Trains 64/291	Train 64 current waits at CP156 to meet Train 291 coming off the single track. The double track project will eliminate this conflict, and time attributed to the meet was removed from Train 64's schedule.
	Delay analysis	Delay analysis has not yet been performed to quantify reduction in delay minutes resulting from holding for meets when trains are out of slot. All existing recovery allowances were maintained.
Syracuse Track improvements east of Syracuse Station including upgrading Tk 7 to 60 mph with bidirectional signals.	All westbound trains All eastbound trains	Trip time between Syracuse and Rome was reduced by one minute for all trains. However, all existing recovery allowances were maintained.
Niagara Falls New station	Westbound trains	Trip time from Exchange Street to Niagara Falls was increased by six minutes. The new station is approximately two miles further west than the current Lockport Road station. Track speed is 20 MPH. It takes three minutes to travel one mile at 20 MPH. Absent any track upgrades, the trip from Exchange Street to the new station will require six additional minutes. It was also assumed that the current practice of turning westbound 280 series trains on the Tuscarora wye prior to entering the station would continue.
	Eastbound 280 series trains.	Three minutes additional trip time was added to 280 series trains which originate at Niagara Falls. It was assumed that the six-minute trip time penalty would be partially mitigated by no longer pulling out from station tracks with hand thrown switches.
	Eastbound Train 64	Six minutes trip time was added.

Exhibit D-17 shows a color-coded service diagram of the New York State intercity rail services. The *Lake Shore Limited*, which connects New York City and Boston with Chicago, is shown in blue. The *Adirondack*, which connects New York City with Montreal via Albany and Plattsburgh, is shown in yellow. The *Maple Leaf*, which connects New York City and Toronto via Albany and Buffalo, is shown in magenta. *Empire Service*, some of which operates as New York-Albany round trips and some of which operates as New York-Niagara Falls round trips, is shown in green.

Exhibit D-17 - Base Alternative Service Diagram

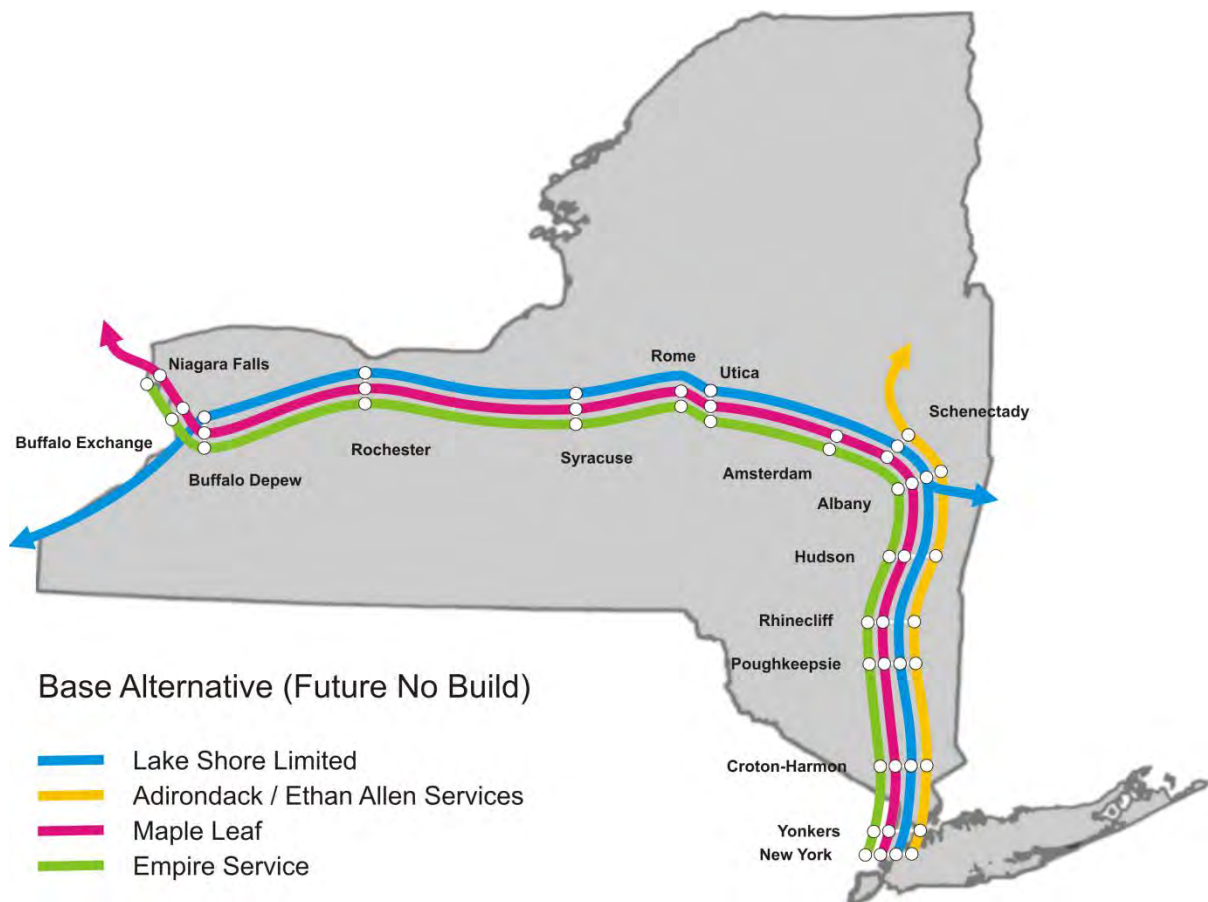


Exhibit D-18 - Base Alternative– Eastbound Timetable

Stations/Train Numbers		Trains								
		280 - ExSun	290 - Mon-Fri	284 - Daily	292 - Sat only	48 - Daily	68 - Daily	64 - Daily	296 - Sun only	288 - Sun only
Dep	Montreal						9:30 AM			
Dep	Plattsburgh						12:35 PM			
Dep	Rutland		7:40 AM		10:35 AM				4:45 PM	
Dep	Saratoga		9:43 AM		12:43 PM		3:53 PM		6:57 PM	
Dep	Niagara Falls (New station)	3:50 AM		6:40 AM				12:43 PM		2:55 PM
Dep	Niagara Falls (Current Station)	--		--				--		--
Arr	Buffalo	4:29 AM		7:19 AM				1:22 PM		3:34 PM
Dep	Exchange Street	4:31 AM		7:21 AM				1:24 PM		3:36 PM
Arr	Buffalo Depew	4:43 AM		7:33 AM		8:58 AM		1:36 PM		3:48 PM
Dep		4:47 AM		7:37 AM		9:08 AM		1:40 PM		3:52 PM
Arr	Rochester	5:36 AM		8:26 AM		10:03 AM		2:31 PM		4:42 PM
Dep		5:40 AM		8:30 AM		10:08 AM		2:35 PM		4:46 PM
Arr	Syracuse	6:58 AM		9:48 AM		11:33 AM		3:53 PM		6:04 PM
Dep		7:03 AM		9:53 AM		11:38 AM		3:58 PM		6:09 PM
Arr	Rome	7:41 AM		10:31 AM		no stop		4:36 PM		6:47 PM
Dep		7:43 AM		10:33 AM				4:37 PM		6:49 PM
Arr	Utica	7:56 AM		10:48 AM		12:37 PM		4:50 PM		7:04 PM
Dep		7:59 AM		10:51 AM		12:42 PM		4:53 PM		7:07 PM
Arr	Amsterdam	8:57 AM		11:49 AM		no stop		5:51 PM		8:05 PM
Dep		8:59 AM		11:51 AM				5:53 PM		8:07 PM
Arr	Schenectady	9:17 AM	10:21 AM	12:09 PM	1:14 PM	1:55 PM	4:48 PM	6:11 PM	7:26 PM	8:25 PM
Dep		9:19 AM	10:23 AM	12:11 PM	1:15 PM	2:00 PM	4:50 PM	6:13 PM	7:28 PM	8:27 PM
Arr	Albany-Rensselaer	9:50 AM	10:51 AM	12:50 PM	1:43 PM	2:50 PM	5:38 PM	6:47 PM	7:51 PM	9:05 PM
Dep		10:05 AM	11:05 AM	1:05 PM	2:05 PM	3:50 PM	6:05 PM	7:05 PM	8:05 PM	9:15 PM
Arr	Hudson	10:29 AM	11:29 AM	1:29 PM	2:29 PM	no stop	6:29 PM	7:29 PM	8:29 PM	9:39 PM
Dep		10:30 AM	11:30 AM	1:30 PM	2:30 PM		6:30 PM	7:30 PM	8:30 PM	9:40 PM
Dep	Rhinecliff	10:51 AM	11:51 AM	1:51 PM	2:51 PM	no stop	6:51 PM	7:51 PM	8:51 PM	10:01 PM
Dep	Poughkeepsie	11:05 AM	12:05 PM	2:05 PM	3:05 PM	4:51 PM	7:05 PM	8:05 PM	9:05 PM	10:15 PM
Dep	Croton-Harmon	11:45 AM	12:45 PM	2:45 PM	3:45 PM	5:33 PM	7:45 PM	8:45 PM	9:45 PM	10:55 PM
Dep	Yonkers	no stop	1:04 PM	3:04 PM	4:04 PM	no stop	8:04 PM	9:04 PM	10:04 PM	11:14 PM
Arr	New York	12:35 PM	1:35 PM	3:35 PM	4:35 PM	6:35 PM	8:40 PM	9:35 PM	10:35 PM	11:45 PM

Exhibit D-19 - Base Alternative– Westbound Timetable

Stations/Train Numbers		Trains						
		63 -- Daily	69 -- Daily	281	283	291	49 - Daily	293
Dep	New York	7:15 AM	8:15 AM	10:15 AM	1:15 PM	3:15 PM	3:45 PM	5:45 PM
Dep	Yonkers	7:39 AM	8:39 AM	10:39 AM	1:39 PM	3:39 PM		
Dep	Croton-Harmon	7:58 AM	8:58 AM	10:58 AM	1:58 PM	3:58 PM	4:29 PM	6:25 PM
Dep	Poughkeepsie	8:38 AM	9:38 AM	11:38 AM	2:38 PM	4:38 PM	5:15 PM	7:11 PM
Dep	Rhinecliff	8:52 AM	9:52 AM	11:52 AM	2:52 PM	4:52 PM		7:25 PM
Dep	Hudson	9:15 AM	10:15 AM	12:15 PM	3:15 PM	5:15 PM		7:48 PM
Arr	Albany-	9:43 AM	10:43 AM	12:43 PM	3:43 PM	5:43 PM	6:25 PM	8:16 PM
Dep	Rensselaer	10:00 AM	11:03 AM	12:53 PM	3:53 PM	5:58 PM	7:05 PM	8:26 PM
Arr	Schenectady	10:19 AM	11:21 AM	1:11 PM	4:11 PM	6:16 PM	7:27 PM	8:44 PM
Dep		10:21 AM	11:23 AM	1:13 PM	4:13 PM	6:18 PM	7:31 PM	8:46 PM
Arr	Amsterdam	10:36 AM		1:28 PM	4:28 PM			
Dep		10:38 AM		1:30 PM	4:30 PM			
Arr	Utica	11:35 AM		2:23 PM	5:27 PM		8:40 PM	
Dep		11:37 AM		2:25 PM	5:29 PM		8:44 PM	
Arr	Rome	11:51 AM		2:38 PM	5:43 PM			
Dep		11:53 AM		2:39 PM	5:44 PM			
Arr	Syracuse	12:38 PM		3:24 PM	6:29 PM		9:37 PM	
Dep		12:42 PM		3:28 PM	6:33 PM		9:41 PM	
Arr	Rochester	1:54 PM		4:43 PM	7:43 PM		10:56 PM	
Dep		1:58 PM		4:47 PM	7:47 PM		11:00 PM	
Arr	Buffalo Depew	3:01 PM		5:44 PM	8:44 PM		12:02 AM	
Dep		3:04 PM		5:47 PM	8:47 PM		12:10 AM	
Arr	Buffalo	3:16 PM		5:59 PM	8:59 PM			
Dep	Exchange Street	3:18 PM		6:01 PM	9:01 PM			
Arr	Niagara Falls (Current Station)	--		--	--			
Arr	Niagara Falls (New Station)	4:33 PM		7:16 PM	10:16 PM			
Dep	Saratoga		11:51 AM			6:46 PM		9:14 PM
Arr	Rutland					8:59 PM		11:27 PM
Dep	Plattsburgh		3:15 PM					
Arr	Montreal		7:10 PM					

2.1.4. Alternative 90A

Under Alternative 90A, trains would operate at a maximum speed of 90 MPH on the corridor between Schenectady Station and Buffalo Exchange Station. This alternative features four new round trips (eight one way trips) between Albany-Rensselaer Station and Niagara Falls Station as shown in Exhibit D-21 and Exhibit D-22. One of the westbound trips (the 6:00 AM westbound departure from Albany) originates in Albany while the remaining trips originate from New York Penn Station. New round trips would provide express service in western New York, stopping at Albany-Rensselaer, Syracuse, Rochester, Buffalo Depew, Buffalo Exchange Street and Niagara Falls Stations. The express service reduces trip times by eliminating some station stops.

Exhibit D-23 shows the TrainOps simulation results for a single train trip over the corridor. These results were used to construct the Alternative 90A operating plan. In this alternative passenger trains and freight share tracks west of Hoffmans. For this scenario due to the sharing of tracks, a schedule margin of 10 percent (equivalent to increasing scheduled times by 10 percent over the best possible trip times) is appropriate.

Exhibit D-20 shows the service diagram for Alternative 90A. The light purple color represents the new express train service in this alternative, with stops only at New York, Albany, Syracuse, Rochester, Buffalo Depew, Buffalo Exchange and Niagara Falls.

Exhibit D-20 - Alternative 90A Service Diagram

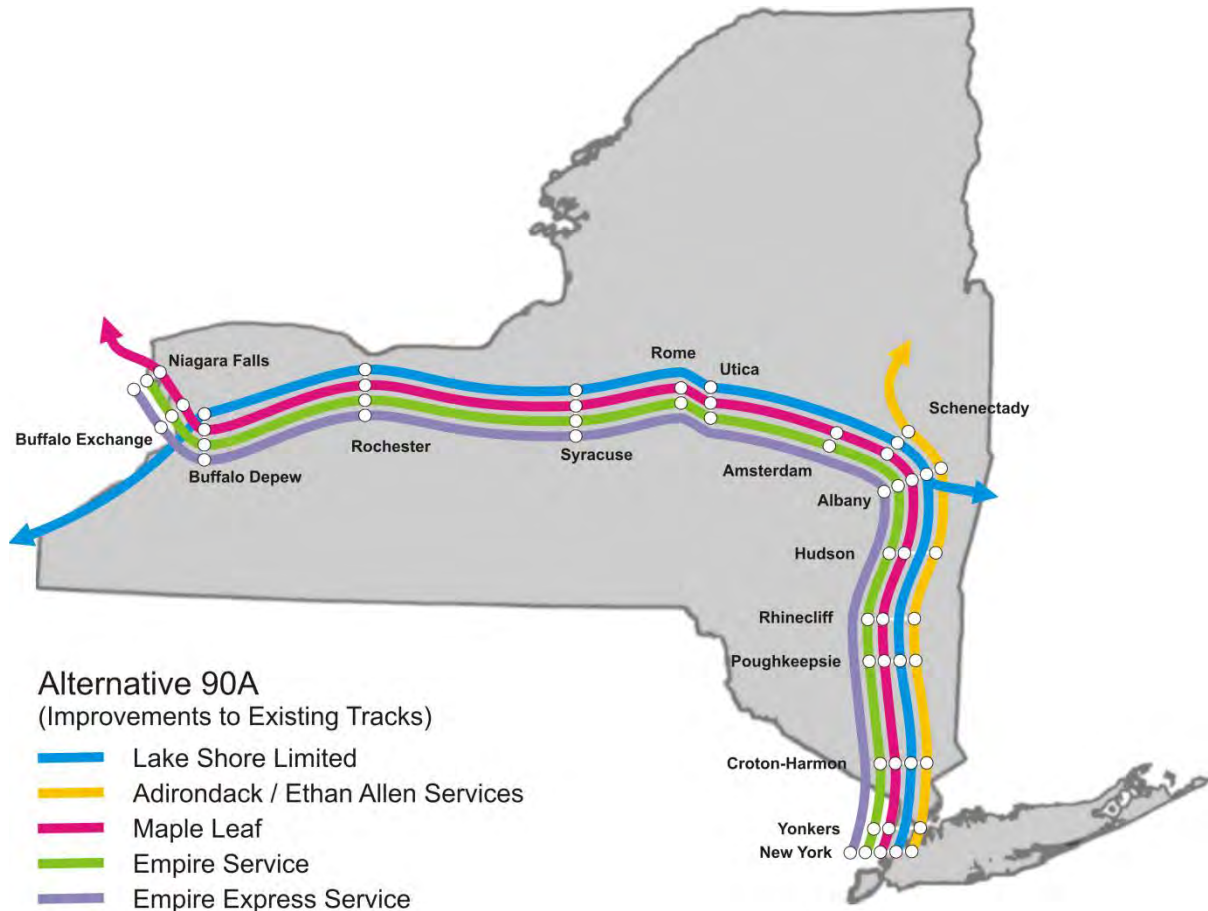


Exhibit D-21 - Alternative 90A – Eastbound Timetable

Stations/Train Numbers						WNY Express			WNY Express					WNY Express			WNY Express
		230	232	234	2XX	WNY-02	290	280	WNY-04	244	242	284	48	WNY-06	68	64	WNY-08
		Mo-Fr	Mo-Fr	Mo-Fr	Mo-Fr	Daily	Mo-Fri	ExSun	Daily	Mo-Fr	Mo-Fr	Daily	Daily	Daily	Daily	Daily	Daily
Dep	Niagara Falls (New Station)					4:25 AM		6:05 AM	7:55 AM			10:15 AM		11:40 AM		1:20 PM	3:10 PM
Arr	Buffalo					5:01 AM		6:41 AM	8:31 AM			10:51 AM		12:16 PM		1:56 PM	3:46 PM
Dep	Exchange Street					5:03 AM		6:43 AM	8:33 AM			10:53 AM		12:18 PM		1:58 PM	3:48 PM
Arr	Buffalo Depew					5:15 AM		6:55 AM	8:45 AM			11:05 AM	9:30 AM	12:30 PM		2:10 PM	4:00 PM
Dep	Buffalo Depew					5:19 AM		6:59 AM	8:49 AM			11:09 AM	9:40 AM	12:34 PM		2:14 PM	4:04 PM
Arr	Rochester					6:05 AM		7:43 AM	9:35 AM			11:53 AM	10:35 AM	1:20 PM		2:58 PM	4:50 PM
Dep	Rochester					6:10 AM		7:48 AM	9:40 AM			11:58 AM	10:40 AM	1:25 PM		3:03 PM	4:55 PM
Arr	Syracuse					7:26 AM		9:04 AM	10:56 AM			1:14 PM	12:05 PM	2:41 PM		4:19 PM	6:11 PM
Dep	Syracuse					7:30 AM		9:09 AM	11:00 AM			1:19 PM	12:10 PM	2:45 PM		4:24 PM	6:15 PM
Arr	Rome							9:45 AM				1:55 PM				5:00 PM	
Dep	Rome							9:47 AM				1:57 PM				5:02 PM	
Arr	Utica					8:20 AM		10:00 AM	11:50 AM			2:10 PM	1:09 PM	3:35 PM		5:15 PM	7:05 PM
Dep	Utica					8:22 AM		10:03 AM	11:52 AM			2:13 PM	1:14 PM	3:37 PM		5:18 PM	7:07 PM
Arr	Amsterdam							11:00 AM				3:10 PM				6:15 PM	
Dep	Amsterdam							11:02 AM				3:12 PM				6:17 PM	
Arr	Schenectady						10:30 AM	11:20 AM				3:30 PM	2:27 PM		5:55 PM	6:35 PM	
Dep	Schenectady						10:32 AM	11:22 AM				3:32 PM	2:32 PM		5:57 PM	6:37 PM	
Arr	Albany-Rensselaer					10:05 AM	11:00 AM	12:00 PM	1:35 PM			4:10 PM	3:22 PM	5:20 PM	6:25 PM	7:15 PM	8:50 PM
Dep	Albany-Rensselaer	5:20 AM	6:30 AM	7:00 AM	9:15 AM	10:15 AM	11:15 AM	12:15 PM	1:45 PM	2:15 PM	3:15 PM	4:25 PM	4:25 PM	5:30 PM	6:40 PM	7:30 PM	9:00 PM
Arr	Hudson	5:45 AM	6:55 AM	7:25 AM	9:39 AM		11:39 AM	12:39 PM		2:39 PM	3:39 PM	4:49 PM			7:04 PM	7:54 PM	
Dep	Hudson	5:46 AM	6:56 AM	7:26 AM	9:40 AM		11:40 AM	12:40 PM		2:40 PM	3:40 PM	4:50 PM			7:05 PM	7:55 PM	
Dep	Rhinecliff	6:06 AM	7:16 AM	7:46 AM	10:00 AM		12:00 PM	12:59 PM		3:00 PM	4:00 PM	5:09 PM			7:25 PM	8:14 PM	
Dep	Poughkeepsie				10:14 AM		12:14 PM	1:13 PM		3:14 PM	4:14 PM	5:23 PM			7:39 PM	8:28 PM	
Dep	Croton-Harmon	6:54 AM	8:04 AM		10:50 AM		12:50 PM	1:49 PM		3:50 PM	4:50 PM	5:59 PM	6:10 PM		8:15 PM	9:04 PM	
Dep	Yonkers						1:09 PM				5:09 PM				8:34 PM	9:24 PM	
Arr	New York	7:35 AM	8:45 AM	9:15 AM	11:35 AM	12:20 PM	1:35 PM	2:35 PM	3:50 PM	4:35 PM	5:35 PM	6:45 PM	7:00 PM	7:35 PM	9:00 PM	9:50 PM	11:05 PM

Exhibit D-22 - Alternative 90A – Westbound Timetable

Stations/Train Numbers		WNY EXPRESS			WNY EXPRESS			WNY EXPRESS			WNY EXPRESS							
		WNY-01	63	69	WNY-03	281	233	WNY-05	283	291	WNY-07	2XX	49	239	241	243	247X	245
		Mo-Fr	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Rut – ExFr/Alb - Daily	Daily	Daily	Daily	Rut – Fri/Alb - Daily	Daily	Daily	Daily	Daily
Dep	New York		7:15 AM	8:15 AM	9:15 AM	10:15 AM	11:15 AM	12:15 PM	1:15 PM	2:15 PM	3:15 PM	3:45 PM	4:15 PM	5:45 PM	7:15 PM	8:50 PM	9:50 PM	10:50 PM
Dep	Yonkers		7:37 AM	8:37 AM		10:37 AM	11:37 AM		1:37 PM	2:37 PM					7:37 PM	9:12 PM	10:12 PM	11:14 PM
Dep	Croton-Harmon		7:57 AM	8:57 AM		10:57 AM	11:57 AM		1:57 PM	2:57 PM			4:59 PM	6:24 PM	7:57 PM	9:32 PM	10:32 PM	11:33 PM
Dep	Poughkeepsie		8:34 AM	9:34 AM		11:34 AM	12:34 PM		2:34 PM	3:34 PM			5:45 PM	7:01 PM	8:34 PM	10:09 PM	11:09 PM	12:13 AM
Dep	Rhinecliff		8:47 AM	9:47 AM		11:47 AM	12:47 PM		2:47 PM	3:47 PM		5:05 PM		7:14 PM	8:47 PM	10:22 PM	11:22 PM	12:27 AM
Dep	Hudson		9:09 AM	10:09 AM		12:09 PM	1:09 PM		3:09 PM	4:09 PM		5:28 PM		7:36 PM	9:09 PM	10:44 PM	11:44 PM	12:50 AM
Arr	Albany-Rensselaer		9:30 AM	10:30 AM	11:15 AM	12:30 PM	1:30 PM	2:15 PM	3:30 PM	4:30 PM	5:15 PM	5:55 PM	6:55 PM	7:57 PM	9:30 PM	11:05 PM	12:05 AM	1:18 AM
Dep	Rensselaer	6:00 AM	9:45 AM	10:45 AM	11:25 AM	12:40 PM		2:25 PM	3:40 PM	4:45 PM	5:25 PM		7:35 PM	8:12 PM				
Arr	Schenectady	-	10:03 AM	11:03 AM	-	12:58 PM			3:58 PM	5:03 PM	-		7:57 PM	8:30 PM				
Dep	Schenectady	-	10:05 AM	11:05 AM	-	1:00 PM			4:00 PM	5:05 PM	-		8:01 PM	8:32 PM				
Arr	Amsterdam	-	10:20 AM		-	1:15 PM			4:15 PM		-							
Dep	Amsterdam	-	10:22 AM		-	1:17 PM			4:17 PM		-							
Arr	Utica	-	11:18 AM		-	2:13 PM			5:13 PM		-		9:10 PM					
Dep	Utica	-	11:20 AM		-	2:15 PM			5:15 PM		-		9:14 PM					
Arr	Rome	-	11:34 AM		-	2:29 PM			5:29 PM		-							
Dep	Rome	-	11:35 AM		-	2:30 PM			5:30 PM		-							
Arr	Syracuse	8:13 AM	12:18 PM		1:38 PM	3:13 PM		4:38 PM	6:13 PM		7:38 PM		10:07 PM					
Dep	Syracuse	8:17 AM	12:22 PM		1:42 PM	3:17 PM		4:42 PM	6:17 PM		7:42 PM		10:11 PM					
Arr	Rochester	9:30 AM	1:30 PM		2:55 PM	4:25 PM		5:55 PM	7:25 PM		8:55 PM		11:26 PM					
Dep	Rochester	9:34 AM	1:34 PM		2:59 PM	4:29 PM		5:59 PM	7:29 PM		8:59 PM		11:30 PM					
Arr	Buffalo Depew	10:26 AM	2:26 PM		3:51 PM	5:21 PM		6:51 PM	8:21 PM		9:51 PM		12:32 AM					
Dep	Buffalo Depew	10:29 AM	2:29 PM		3:54 PM	5:24 PM		6:54 PM	8:24 PM		9:54 PM		12:40 AM					
Arr	Buffalo Exchange Street	10:41 AM	2:41 PM		4:06 PM	5:36 PM		7:06 PM	8:36 PM		10:06 PM							
Dep	Buffalo Exchange Street	10:43 AM	2:43 PM		4:08 PM	5:38 PM		7:08 PM	8:38 PM		10:08 PM							
Arr	Niagara Falls (New Station)	11:40 AM	3:45 PM		5:05 PM	6:40 PM		8:05 PM	9:40 PM		11:05 PM							
			Train continues to Toronto	Train continues to Montreal						Train continues to Rutland			Train continues to Chicago	Train continues to Rutland				

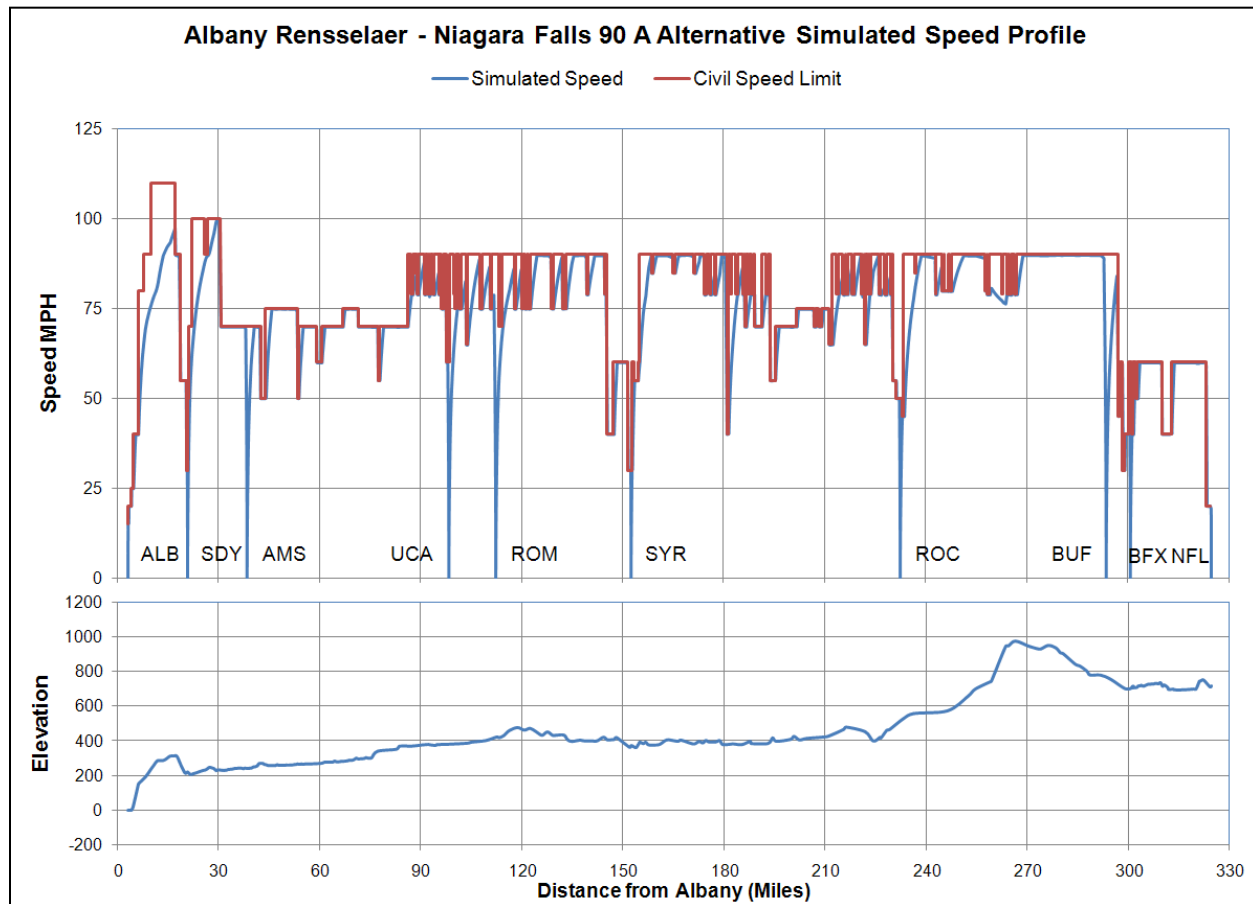
Exhibit D-23 - Alternative 90A Scheduled Run Times (with 10% Schedule Margin)

Station	Dwell	Arrive	Depart
Albany Rensselaer	0:00:00	0:00:00	0:00:00
Schenectady	0:02:00	0:21:58	0:24:10
Amsterdam	0:02:00	0:41:05	0:43:17
Utica	0:02:00	1:41:20	1:43:32
Rome	0:02:00	1:57:28	1:59:40
Syracuse	0:04:00	2:37:58	2:42:22
Rochester	0:04:00	3:54:38	3:59:02
Buffalo-Depew	0:03:00	4:48:54	4:52:12
Buffalo-Exchange	0:02:00	5:02:51	5:05:03
Niagara Falls (New Station)	0:00:00	5:37:55	5:37:55

Schedule margin is uniformly allocated over the entire trip.

Speed Improvements in 90A are limited to sections and curves currently at 79 MPH and assume a 3" cant deficiency.

Exhibit D-24 shows the TrainOps software simulated trip graph (velocity versus distance) for Alternative 90A. The red line represents speed restrictions due to geometry and the blue line represents the simulated velocity of the train including station stops. Alternative 90A uses shared passenger/freight tracks with several speed restrictions (especially in the 75 to 90 MPH range) as indicated by the dips in trip graph.

Exhibit D-24 - Alternative 90A Trip Graph

2.1.5. Alternative 90B

Alternative 90B supports the same maximum speed (90 MPH) between Schenectady and Buffalo Exchange as 90A with different infrastructure designs. Alternatives 90B and 110 feature dedicated third tracks between Hoffmans and Buffalo that are designed to passenger train friendly geometry. Under this design, trains in both directions operate on a largely single track railroad with passing tracks (“fourth track”) at carefully chosen locations which allow two trains to pass at speed, provided that they are both on schedule. Limiting the passing locations (lengths of fourth track) to what is needed to run hourly bidirectional service allows for trains in opposite directions to “meet” at exactly the same location. This means that they must follow the same schedule and have the same elapsed time from “meet” to “meet”. With this design the overall length of track miles needed is optimized, reducing the infrastructure cost of these two alternatives.

Providing express service as a component of Alternatives 90B and 110 was also considered. A train that is more than a few minutes off this planned schedule, such as an express service, would need to wait 15 to 20 minutes at the previous passing track (“meet” location) for a train in the opposite direction to clear single track. Although the express service would save 3 to 5 minutes of travel time saved with each station stop eliminated, the travel time is increased with waiting at the next “meet” location under the design for Alternatives 90B and 110. The design of Alternatives 90B and 110 could be adjusted by providing additional locations of fourth track, significantly increasing the cost of each of these alternatives. It would also be possible to run express service very early in the morning

(eastbound) and late at night (westbound) when there are no trains operating in the opposite direction. However, considering the increase in cost needed to provide additional fourth track to accommodate express service; and considering the limited timeframe available for express service without this added fourth track and that this scenario eliminates the passenger convenience of “memory schedules;” Alternatives 90B and 110 were developed without express service.

The operating plan has eight round trips between Albany and Buffalo, the same frequency as Alternative 90A. The alternative’s operating plan is shown in Exhibit D-26 and Exhibit D-27.

Exhibit D-25 shows the service diagram for Alternative 90B.

Exhibit D-25 - Alternative 90B Service Diagram

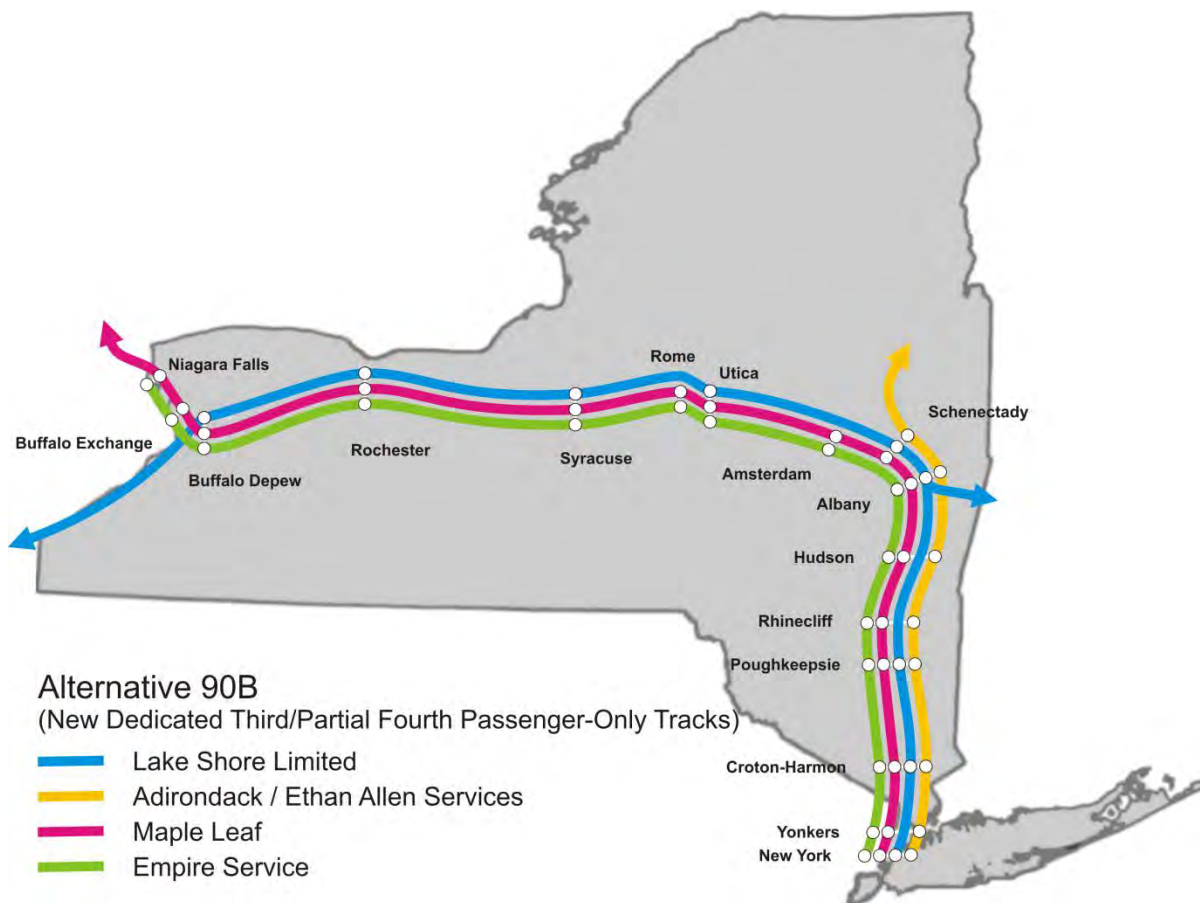


Exhibit D-28 shows the TrainOps simulation results for a single passenger train operating over the Alternative 90B infrastructure. A schedule margin was of 8 percent is considered appropriate due to the use of dedicated third and fourth tracks for most of the corridor in this alternative.

Exhibit D-26 - Alternative 90B – Eastbound Timetable

Stations/Train Numbers		230	232	234	236	280	238	282	290	284	240	286	242	48	288	68	64	298
Dep	Montreal								Train originates at Rutland					Train originates at Chicago		Train originates at Montreal	Train originates at Toronto	
Dep	Plattsburgh																	
Dep	Rutland																	
Dep	Saratoga																	
Dep	Niagara Falls (New Station)					3:49 AM		5:49 AM		7:49 AM		9:49 AM			11:49 AM		1:49 PM	3:49 PM
Dep	Buffalo Exchange Street					4:22 AM		6:22 AM		8:22 AM		10:22 AM			12:22 PM		2:22 PM	4:22 PM
Dep	Buffalo Depew					4:39 AM		6:39 AM		8:39 AM		10:39 AM		11:06 AM	12:39 PM		2:39 PM	4:39 PM
Dep	Rochester					5:29 AM		7:29 AM		9:29 AM		11:29 AM		11:59 AM	1:29 PM		3:29 PM	5:29 PM
Dep	Syracuse					6:34 AM		8:34 AM		10:34 AM		12:34 PM		1:34 PM	2:34 PM		4:34 PM	6:34 PM
Dep	Rome					7:07 AM		9:07 AM		11:07 AM		1:07 PM			3:07 PM		5:07 PM	7:07 PM
Dep	Utica					7:28 AM		9:28 AM		11:28 AM		1:28 PM		2:37 PM	3:28 PM		5:28 PM	7:28 PM
Dep	Amsterdam					8:13 AM		10:13 AM		12:13 PM		2:13 PM		.....	4:13 PM		6:13 PM	8:13 PM
Dep	Schenectady					8:30 AM		10:30 AM	11:26 AM	12:30 PM		2:30 PM		3:41 PM	4:30 PM	5:16 PM	6:30 PM	8:30 PM
Arr	Albany-Rensselaer					8:56 AM		10:56 AM	11:50 AM	12:56 PM		2:56 PM		4:20 PM	4:56 PM	5:50 PM	6:56 PM	8:56 PM
Dep	Hudson	5:10 AM	6:10 AM	7:10 AM	8:10 AM	9:10 AM	10:10 AM	11:10 AM	12:10 PM	1:10 PM	2:10 PM	3:10 PM	4:10 PM	4:45 PM	5:10 PM	6:10 PM	7:10 PM	9:10 PM
Dep	Rhinecliff	5:34 AM	6:34 AM	7:34 AM	8:34 AM	9:34 AM	10:34 AM	11:34 AM	12:34 PM	1:34 PM	2:34 PM	3:34 PM	4:34 PM	.....	5:34 PM	6:34 PM	7:34 PM	9:34 PM
Dep	Poughkeepsie	5:55 AM	6:55 AM	7:55 AM	8:55 AM	9:55 AM	10:55 AM	11:55 AM	12:55 PM	1:55 PM	2:55 PM	3:55 PM	4:55 PM	.....	5:55 PM	6:55 PM	7:55 PM	9:55 PM
Dep	Croton-Harmon	.....	.....	.....	9:09 AM	.....	.....	.....	.....	.....	3:09 PM	.....	.....	.....	6:09 PM	7:09 PM	8:09 PM	10:09 PM
Dep	Yonkers	6:42 AM	.....	.....	9:45 AM	10:43 AM	11:43 AM	12:43 PM	1:43 PM	2:43 PM	3:45 PM	4:43 PM	.....	6:00 PM	6:45 PM	7:45 PM	8:45 PM	10:45 PM
Dep	New York	.....	.....	.....	.....	11:02 AM	12:02 PM	1:02 PM	2:02 PM	3:02 PM	.....	5:02 PM	.....	.....	.....	8:04 PM	9:04 PM	11:04 PM
Arr	New York	7:20 AM	8:15 AM	9:15 AM	10:25 AM	11:25 AM	12:25 PM	1:25 PM	2:25 PM	3:25 PM	4:25 PM	5:25 PM	6:20 PM	6:55 PM	7:25 PM	8:30 PM	9:30 PM	11:30 PM

Exhibit D-27 - Alternative 90B – Westbound Timetable

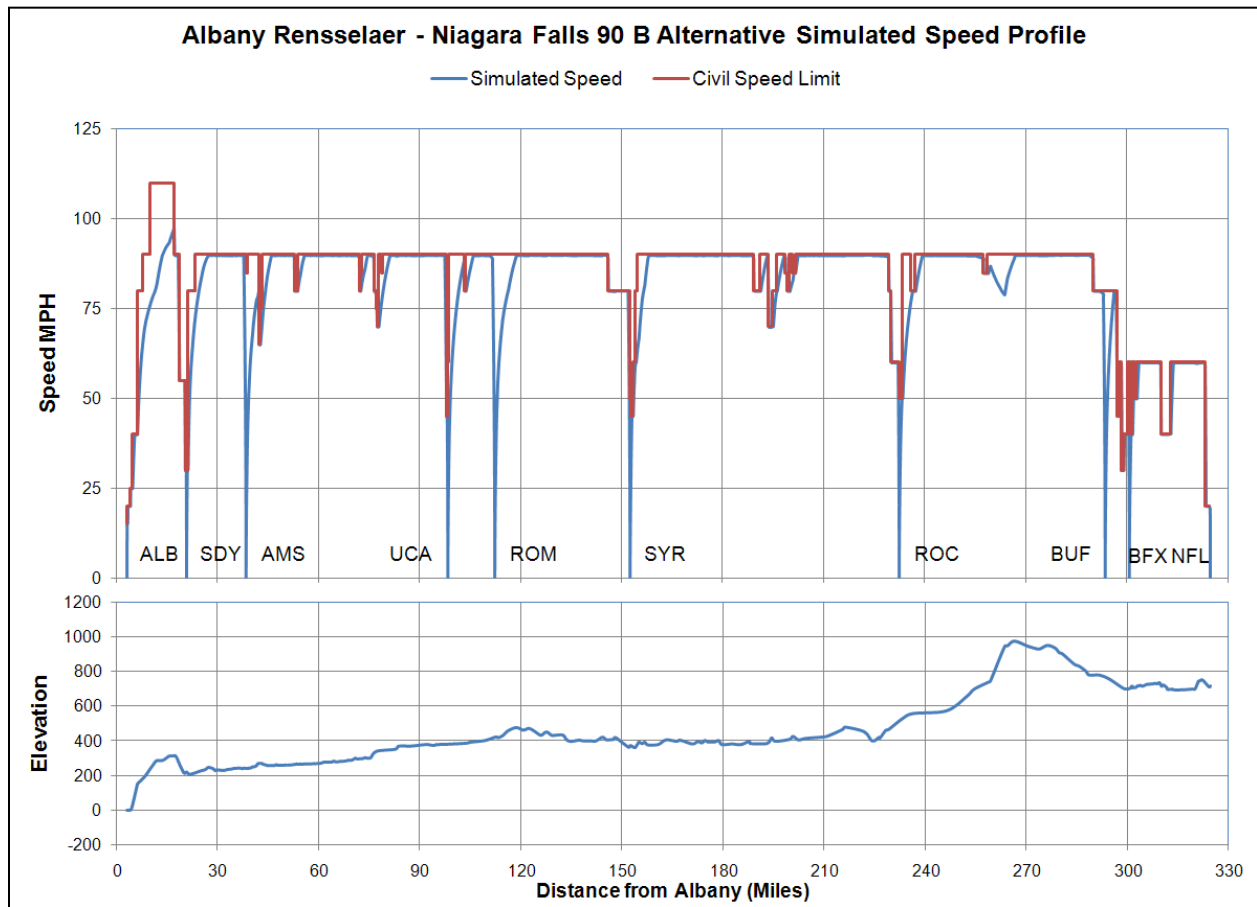
Stations/Train Numbers		299	63	69	281	231	283	285	291	287	255	289	257	233	49	241	243	245	247
Dep	New York		7:15 AM	8:15 AM	9:15 AM	10:15 AM	11:15 AM	1:15 PM	2:15 PM	3:15 PM	3:45 PM	4:15 PM	4:45 PM	5:45 PM	6:45 PM	7:15 PM	8:15 PM	9:15 PM	11:15 PM
Dep	Yonkers		7:37 AM	8:37 AM	.....	.....	11:37 AM	.....	2:37 PM	.....	.....	4:37 PM	.....	.....	.....	7:37 PM	8:37 PM	9:37 PM	11:37 PM
Dep	Croton-Harmon		7:57 AM	8:57 AM	9:54 AM	10:54 AM	11:57 AM	1:54 PM	2:57 PM	3:54 PM	.....	4:57 PM	.....	6:24 PM	7:25 PM	7:57 PM	8:57 PM	9:57 PM	11:57 PM
Dep	Poughkeepsie		8:34 AM	9:34 AM	10:31 AM	11:31 AM	.....	2:31 PM	.....	4:31 PM	.....	.....	.....	7:01 PM	.....	.....	9:34 PM	10:34 PM	12:34 AM
Dep	Rhinecliff		8:47 AM	9:47 AM	10:44 AM	11:44 AM	12:44 PM	2:44 PM	3:44 PM	4:44 PM	5:09 PM	5:44 PM	6:09 PM	7:14 PM	.....	8:44 PM	9:47 PM	10:47 PM	12:47 AM
Dep	Hudson		9:09 AM	10:09 AM	11:07 AM	12:07 PM	1:07 PM	3:07 PM	4:07 PM	5:07 PM	5:31 PM	6:07 PM	6:31 PM	7:37 PM	.....	9:07 PM	10:09 PM	11:09 PM	1:09 AM
Arr	Albany-		9:30 AM	10:30 AM	11:30 AM	12:30 PM	1:30 PM	3:30 PM	4:30 PM	5:30 PM	5:50 PM	6:30 PM	6:50 PM	7:59 PM	9:00 PM	9:30 PM	10:30 PM	11:30 PM	1:30 AM
Dep	Rensselaer	5:45 AM	9:45 AM	10:55 AM	11:45 AM		1:45 PM	3:45 PM	4:40 PM	5:45 PM	6:00 PM	6:45 PM	7:00 PM		9:40 PM				
Arr	Schenectady	6:02 AM	10:02 AM	11:13 AM	12:02 PM		2:02 PM	4:02 PM	4:58 PM	6:02 PM	6:18 PM	7:02 PM	7:18 PM		10:00 PM				
Arr	Amsterdam	6:19 AM	10:19 AM		12:19 PM		2:19 PM	4:19 PM		6:19 PM		7:19 PM			.....			
Arr	Utica	7:06 AM	11:06 AM		1:06 PM		3:06 PM	5:06 PM		7:06 PM		8:06 PM			11:04 PM				
Arr	Rome	7:22 AM	11:22 AM		1:22 PM		3:22 PM	5:22 PM		7:22 PM		8:22 PM			.....			
Arr	Syracuse	7:59 AM	11:59 AM		1:59 PM		3:59 PM	5:59 PM		7:59 PM		8:59 PM			11:58 PM				
Arr	Rochester	9:05 AM	1:05 PM		3:05 PM		5:05 PM	7:05 PM		9:05 PM		10:05 PM			1:12 AM				
Arr	Buffalo Depew	9:56 AM	1:56 PM		3:56 PM		5:56 PM	7:56 PM		9:56 PM		10:56 PM			2:16 AM				
Arr	Buffalo Exchange Street	10:12 AM	2:12 PM		4:12 PM		6:12 PM	8:12 PM		10:12 PM		11:12 PM							
Arr	Niagara Falls (New Station)	10:51 AM	2:51 PM		4:51 PM		6:51 PM	8:51 PM		10:51 PM		11:51 PM							
Dep	Saratoga		Train continues to Toronto	Train continues to Montreal					Train continues to Rutland						Train continues to Chicago				
Dep	Rutland																		
Dep	Plattsburgh																		
Arr	Montreal																		

Exhibit D-28 - Alternative 90B Scheduled Run Times (with 8% Schedule Margin)

Station	Dwell	Arrive	Depart
Albany Rensselaer	0:00:00	0:00:00	0:00:00
Schenectady	0:02:00	0:21:40	0:23:50
Amsterdam	0:02:00	0:39:25	0:41:35
Utica	0:02:00	1:28:39	1:30:49
Rome	0:02:00	1:43:32	1:45:42
Syracuse	0:04:00	2:17:52	2:22:11
Rochester	0:04:00	3:24:44	3:29:03
Buffalo-Depew	0:03:00	4:16:57	4:20:11
Buffalo-Exchange	0:02:00	4:30:39	4:32:48
Niagara Falls (New Station)	0:00:00	5:05:05	5:05:05

Schedule margin is uniformly allocated over the entire trip.

Exhibit D-29 shows the TrainOps software simulated trip graph (velocity versus distance) for Alternative 90B. The red plot represents civil speed restrictions while the blue represents the simulated velocity of the train. Alternative 90B uses dedicated passenger-only tracks and less stringent curve speed criteria than Alternative 90A. Therefore, Alternative 90B has fewer speed restrictions (especially in the 75 to 90 MPH range) than Alternative 90A.

Exhibit D-29 - Alternative 90 B Trip Graph**2.1.6.2035 Alternative 110**

Alternative 110 is similar to Alternative 90B but increases the maximum speed of the third main track to 110 MPH between Schenectady and Buffalo Exchange stations. The fourth main track, where included, is limited to 90 MPH in this alternative. The Alternative 110 operating plan has eight round trips between Albany and Buffalo, the same frequency as Alternatives 90A and 90B. The alternative's operating plan is shown in Exhibit D-31 and Exhibit D-32. The passenger service operates on long sections of single track with carefully-scheduled "meets" between opposing direction trains where both the third and fourth tracks are constructed. Therefore, all passenger train trips must operate with a "clockface" pattern and have identical run times. This means that Alternative 110 has a stopping pattern similar to Alternative 90B and does not have the express service that Alternative 90A does.

As with Alternative 90B, Alternative 110's train schedules have been developed based on the best-possible simulated trip times along with 8 percent schedule margin. This accounts for train delays and temporary speed restrictions. The single train simulation results are shown in Exhibit D-33.

Exhibit D-30 shows the service diagram for Alternative 110. It is identical to the Alternative 90B and Base Alternative service diagrams.

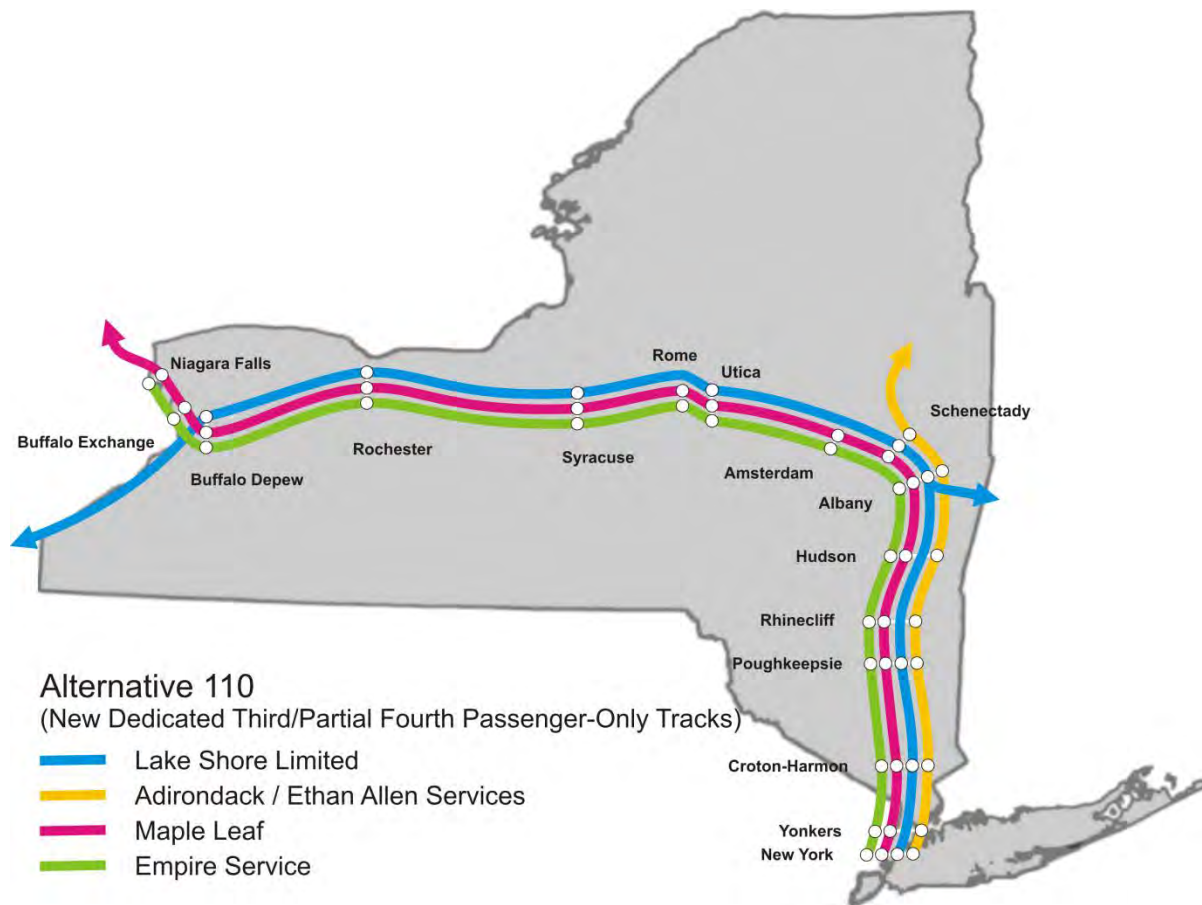
Exhibit D-30 - Alternative 110 Service Diagram

Exhibit D-31 - Alternative 110 – Eastbound Timetable

Stations/Train Numbers	230	232	234	236	280	238	282	290	284	240	286	242	48	288	68	64	298
Dep Montreal								Train originates at Rutland					Train originates at Chicago		Train originates at Montreal	Train originates at Toronto	
Dep Plattsburgh																	
Dep Rutland																	
Dep Saratoga																	
Dep Niagara Falls (New Station)					4:05 AM		6:05 AM		8:05 AM		10:05 AM			12:05 PM		2:05 PM	4:05 PM
Dep Buffalo Exchange Street					4:36 AM		6:36 AM		8:36 AM		10:36 AM			12:36 PM		2:36 PM	4:36 PM
Dep Buffalo Depew					4:53 AM		6:53 AM		8:53 AM		10:53 AM		11:20 AM	12:53 PM		2:53 PM	4:53 PM
Dep Rochester					5:40 AM		7:40 AM		9:40 AM		11:40 AM		12:10 PM	1:40 PM		3:40 PM	5:40 PM
Dep Syracuse					6:43 AM		8:43 AM		10:43 AM		12:43 PM		1:45 PM	2:43 PM		4:43 PM	6:43 PM
Dep Rome					7:16 AM		9:16 AM		11:16 AM		1:16 PM			3:16 PM		5:16 PM	7:16 PM
Dep Utica					7:33 AM		9:33 AM		11:33 AM		1:33 PM		2:32 PM	3:33 PM		5:33 PM	7:33 PM
Dep Amsterdam					8:15 AM		10:15 AM		12:15 PM		2:15 PM			4:15 PM		6:15 PM	8:15 PM
Arr Schenectady			7:10 AM		.....		.....		.....		.....
Dep Albany-Rensselaer			.....		8:31 AM		10:31 AM	11:26 AM	12:31 PM		2:31 PM		3:33 PM	4:31 PM	5:16 PM	6:31 PM	8:31 PM
Arr Albany-Rensselaer			7:34 AM		8:56 AM		10:56 AM	11:50 AM	12:56 PM		2:56 PM		4:15 PM	4:56 PM	5:50 PM	6:56 PM	8:56 PM
Dep Hudson	5:10 AM	6:10 AM	.....	8:10 AM	9:10 AM	10:10 AM	11:10 AM	12:10 PM	1:10 PM	2:10 PM	3:10 PM	4:10 PM	4:45 PM	5:10 PM	6:10 PM	7:10 PM	9:10 PM
Dep Rhinecliff	5:34 AM	6:34 AM	.....	8:34 AM	9:34 AM	10:34 AM	11:34 AM	12:34 PM	1:34 PM	2:34 PM	3:34 PM	4:34 PM	.....	5:34 PM	6:34 PM	7:34 PM	9:34 PM
Dep Poughkeepsie	5:55 AM	6:55 AM	7:55 AM	8:55 AM	9:55 AM	10:55 AM	11:55 AM	12:55 PM	1:55 PM	2:55 PM	3:55 PM	4:55 PM	.....	5:55 PM	6:55 PM	7:55 PM	9:55 PM
Dep Croton-Harmon	.....	.....	9:15 AM	9:09 AM	.....	.....	12:09 PM	.....	.....	3:09 PM	.....	.....	.....	6:09 PM	7:09 PM	8:09 PM	10:09 PM
Dep Yonkers	6:42 AM	.....	.....	9:45 AM	10:43 AM	11:43 AM	12:45 PM	1:43 PM	2:43 PM	3:45 PM	4:43 PM	.....	6:00 PM	6:45 PM	7:45 PM	8:45 PM	10:45 PM
Arr New York	.....	.....	.....	.....	11:02 AM	12:02 PM	.....	2:02 PM	3:02 PM	.....	5:02 PM	.....	.....	.....	8:04 PM	9:04 PM	11:04 PM
Arr New York	7:20 AM	8:15 AM	9:15 AM	10:25 AM	11:25 AM	12:25 PM	1:25 PM	2:25 PM	3:25 PM	4:25 PM	5:25 PM	6:20 PM	6:55 PM	7:25 PM	8:30 PM	9:30 PM	11:30 PM

Exhibit D-32 - Alternative 110 – Westbound Timetable

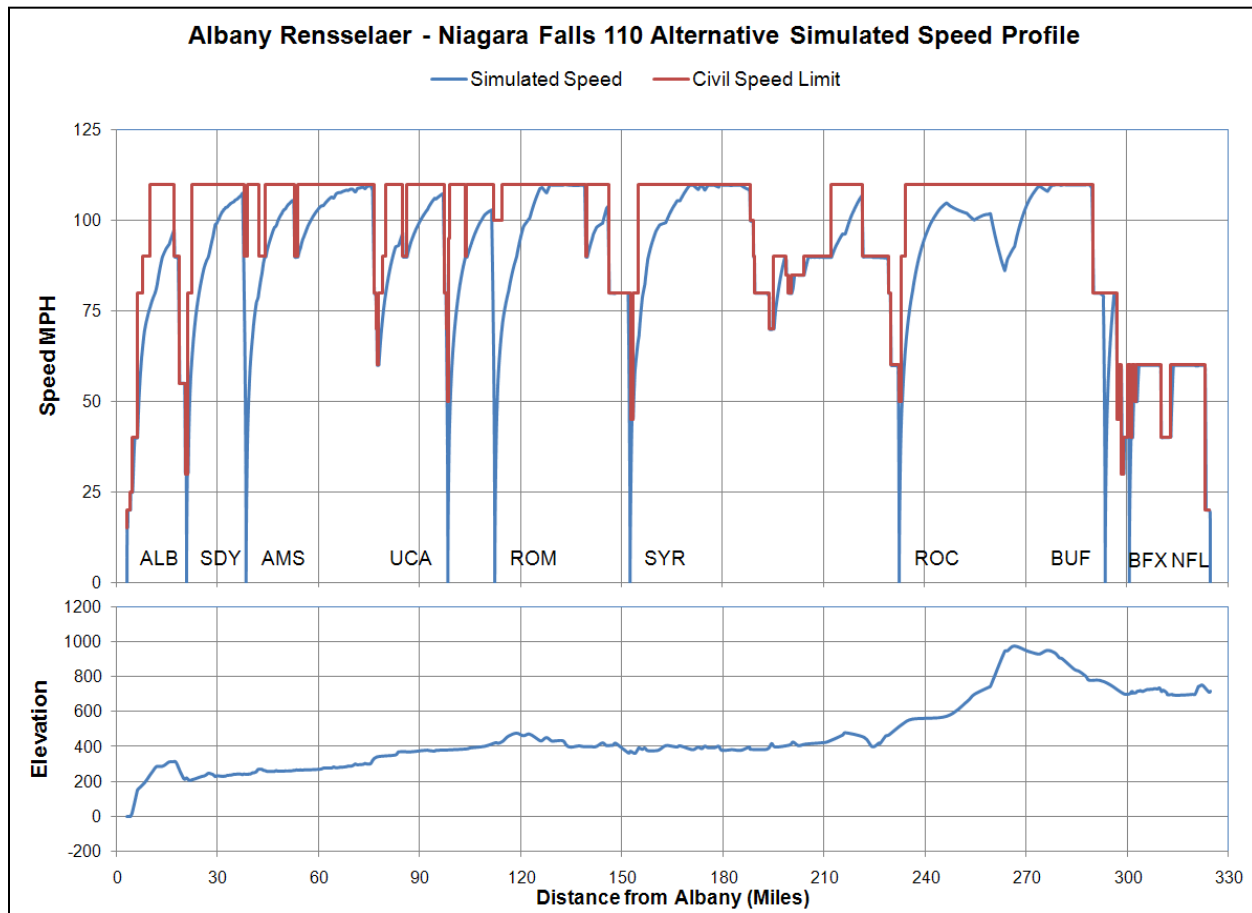
Stations/Train Numbers	299	63	69	281	231	283	285	291	287	233	289	235	237	49	239	241	243	245
Dep New York		7:15 AM	8:15 AM	9:15 AM	10:15 AM	11:15 AM	1:15 PM	2:15 PM	3:15 PM	3:45 PM	4:15 PM	4:45 PM	5:45 PM	6:45 PM	7:15 PM	8:15 PM	9:15 PM	11:15 PM
Dep Yonkers		7:37 AM	8:37 AM	.....	.....	11:37 AM	.....	2:37 PM	.....	.....	4:37 PM	.....	.....	.....	7:37 PM	8:37 PM	9:37 PM	11:37 PM
Dep Croton-Harmon		7:57 AM	8:57 AM	9:54 AM	10:54 AM	11:57 AM	1:54 PM	2:57 PM	3:54 PM	.....	4:57 PM	.....	6:24 PM	7:25 PM	7:57 PM	8:57 PM	9:57 PM	11:57 PM
Dep Poughkeepsie		8:34 AM	9:34 AM	10:31 AM	11:31 AM	.....	2:31 PM	.....	4:31 PM	.....	.....	.....	7:01 PM	.....	.....	9:34 PM	10:34 PM	12:34 AM
Dep Rhinecliff		8:47 AM	9:47 AM	10:44 AM	11:44 AM	12:44 PM	2:44 PM	3:44 PM	4:44 PM	5:09 PM	5:44 PM	6:09 PM	7:14 PM	.....	8:44 PM	9:47 PM	10:47 PM	12:47 AM
Dep Hudson		9:09 AM	10:09 AM	11:07 AM	12:07 PM	1:07 PM	3:07 PM	4:07 PM	5:07 PM	5:31 PM	6:07 PM	6:31 PM	7:37 PM	.....	9:07 PM	10:09 PM	11:09 PM	1:09 AM
Arr Albany-		9:30 AM	10:30 AM	11:30 AM	12:30 PM	1:30 PM	3:30 PM	4:30 PM	5:30 PM	5:50 PM	6:30 PM	6:50 PM	7:59 PM	9:00 PM	9:30 PM	10:30 PM	11:30 PM	1:30 AM
Dep Rensselaer	5:45 AM	9:45 AM	10:55 AM	11:45 AM	.....	1:45 PM	3:45 PM	4:40 PM	5:45 PM	.....	6:45 PM	.....	.....	9:40 PM	.....	.....	.....	.....
Arr Schenectady	6:02 AM	10:02 AM	11:13 AM	12:02 PM	.....	2:02 PM	4:02 PM	4:58 PM	6:02 PM	.....	7:02 PM	.....	.....	10:00 PM	.....	.....	.....	.....
Arr Amsterdam	6:18 AM	10:18 AM	.....	12:18 PM	.....	2:18 PM	4:18 PM	.....	6:18 PM	.....	7:18 PM	.....	.....	.....	.....	.....	.....	.....
Arr Utica	7:02 AM	11:02 AM	.....	1:02 PM	.....	3:02 PM	5:02 PM	.....	7:02 PM	.....	8:02 PM	.....	.....	11:03 PM	.....	.....	.....	.....
Arr Rome	7:17 AM	11:17 AM	.....	1:17 PM	.....	3:17 PM	5:17 PM	.....	7:17 PM	.....	8:17 PM	.....	.....	.....	.....	.....	.....	.....
Arr Syracuse	7:53 AM	11:53 AM	.....	1:53 PM	.....	3:53 PM	5:53 PM	.....	7:53 PM	.....	8:53 PM	.....	.....	11:55 PM	.....	.....	.....	.....
Arr Rochester	8:55 AM	12:55 PM	.....	2:55 PM	.....	4:55 PM	6:55 PM	.....	8:55 PM	.....	9:55 PM	.....	.....	1:05 AM	.....	.....	.....	.....
Arr Buffalo Depew	9:42 AM	1:42 PM	.....	3:42 PM	.....	5:42 PM	7:42 PM	.....	9:42 PM	.....	10:42 PM	.....	.....	2:05 AM	.....	.....	.....	.....
Arr Buffalo Exchange Street	10:00 AM	2:00 PM	.....	4:00 PM	.....	6:00 PM	8:00 PM	.....	10:00 PM	.....	11:00 PM	.....	.....	.....	.....	.....	.....	.....
Arr Niagara Falls (New Station)	10:37 AM	2:37 PM	.....	4:37 PM	.....	6:37 PM	8:37 PM	.....	10:37 PM	.....	11:37 PM	.....	.....	.....	.....	.....	.....	.....
Dep Saratoga	.....	Train continues to Toronto	Train continues to Montreal	.....	.....	.....	.....	Train continues to Rutland	.....	.....	.....	.....	.....	Train continues to Chicago	.....	.....	.....	.....
Arr Rutland	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dep Plattsburgh	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Arr Montreal	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Exhibit D-33 - Alternative 110 Scheduled Run Times (with 8% Schedule Margin)

Station	Dwell	Arrive	Depart
Albany Rensselaer	0:00:00	0:00:00	0:00:00
Schenectady	0:02:00	0:21:40	0:23:50
Amsterdam	0:02:00	0:38:37	0:40:46
Utica	0:02:00	1:23:32	1:25:42
Rome	0:02:00	1:37:51	1:40:00
Syracuse	0:04:00	2:09:33	2:13:52
Rochester	0:04:00	3:12:40	3:17:00
Buffalo-Depew	0:03:00	3:59:45	4:02:59
Buffalo-Exchange	0:02:00	4:13:26	4:15:36
Niagara Falls (New Station)	0:00:00	4:47:52	4:47:52

Schedule margin is uniformly allocated over the entire trip.

Exhibit D-34 shows the TrainOps software simulated trip graph (velocity versus distance) for Alternative 110. As with Alternative 90B, Alternative 110 uses dedicated passenger-only tracks and less stringent curve speed criteria than Alternative 90A.

Exhibit D-34 - Alternative 110 Trip Graph

2.1.7.2035 Alternative 125

This alternative provides a dedicated high speed rail corridor on a new alignment from the current Empire Corridor between Albany and a new Buffalo Downtown Station. This segment is assumed to be electrified and completely grade-separated. Using “dual mode” (electric and diesel) locomotives, trains are assumed to operate in diesel mode on the Niagara Branch (Buffalo Downtown to Niagara Falls) and on the Hudson Line from Albany south. The maximum speed on the dedicated corridor between Albany and Buffalo is assumed to be 125 MPH. Given the capital-intensive nature of an electrified rail corridor and the need to financially support this major investment, Alternative 125 has more frequent service than the other alternatives, offering with hourly service operated between Albany-Rensselaer and Buffalo Downtown, as shown in Exhibit D-36 through Exhibit D-39. This level of service is consistent with the Alternative’s ridership forecasts and available operating capacity on a dedicated, passenger-only, two-track rail corridor.

Exhibit D-35 shows the Alternative 125 service diagram, including the new high speed service between Albany and Buffalo Downtown. North of Buffalo, a shuttle service to Niagara Falls is assumed, though this could also represent dual mode high speed trains (in diesel mode) operating in through service to Niagara Falls.

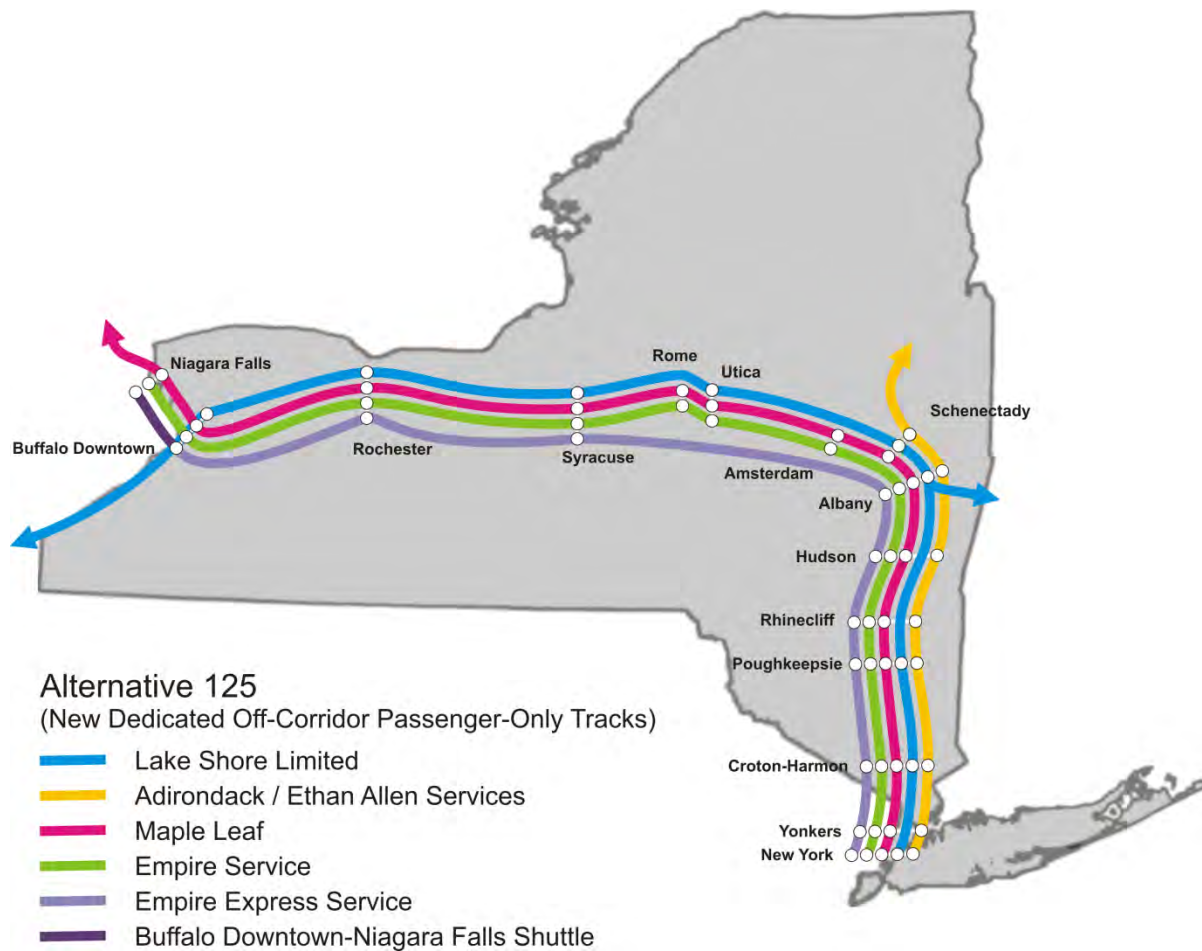
Exhibit D-35 - Alternative 125 Service Diagram

Exhibit D-36 - Alternative 125 – Eastbound Timetable (AM)

Stations/Train Numbers		230	232	234	HST-02	HST-04	NFL-06	HST-06	280	HST-08	290	HST-10	HST-12	284	HST-14	NFL-16
Dep	Niagara Falls (New Station)						6:20 AM		4:20 AM		Train originates in Rutland			7:20 AM		11:20 AM
Arr	Buffalo						7:00 AM		5:00 AM					8:00 AM		12:00 PM
Dep	Exchange (New Station)				5:15 AM	6:15 AM		7:15 AM	5:05 AM	8:15 AM		9:15 AM	10:15 AM	8:05 AM	11:15 AM	
Arr	Rochester (HST)				5:54 AM	6:54 AM		7:54 AM		8:54 AM		9:54 AM	10:54 AM		11:54 AM	
Dep					5:57 AM	6:57 AM		7:57 AM		8:57 AM		9:57 AM	10:57 AM		11:57 AM	
Arr	Rochester (Central Ave)								6:02 AM					9:02 AM		
Dep									6:06 AM					9:06 AM		
Arr	Syracuse (HST)				6:39 AM	7:39 AM		8:39 AM		9:39 AM		10:39 AM	11:39 AM		12:39 PM	
Dep					6:43 AM	7:43 AM		8:43 AM		9:43 AM		10:43 AM	11:43 AM		12:43 PM	
Arr	Syracuse (RTC)								7:24 AM					10:24 AM		
Dep									7:29 AM					10:29 AM		
Arr	Rome								8:07 AM					11:07 AM		
Dep									8:08 AM					11:08 AM		
Arr	Utica								8:22 AM					11:22 AM		
Dep									8:25 AM					11:25 AM		
Arr	Amsterdam								9:23 AM					12:23 PM		
Dep									9:25 AM					12:25 PM		
Arr	Schenectady								9:43 AM					12:43 PM		
Dep									9:46 AM		10:55 AM			12:46 PM		
Arr	Albany-Rensselaer				8:00 AM	9:00 AM		10:00 AM	10:25 AM	11:00 AM	11:25 AM	12:00 PM	1:00 PM	1:25 PM	2:00 PM	
Dep		5:40 AM	6:40 AM	7:10 AM	8:10 AM	9:10 AM		10:10 AM	10:40 AM	11:10 AM	11:40 AM	12:10 PM	1:10 PM	1:40 PM	2:10 PM	
Dep	Hudson	6:04 AM	7:04 AM	7:34 AM	8:34 AM	9:34 AM		10:34 AM	11:04 AM	11:34 AM	12:04 PM	12:34 PM	1:34 PM	2:04 PM	2:34 PM	
Dep	Rhinecliff	6:25 AM	7:25 AM	7:55 AM	8:55 AM	9:55 AM		10:55 AM	11:25 AM	11:55 AM	12:25 PM	12:55 PM	1:55 PM	2:25 PM	2:55 PM	
Dep	Poughkeepsie	6:39 AM			9:09 AM			11:09 AM	11:39 AM		12:39 PM	1:09 PM		2:39 PM	3:09 PM	
Dep	Croton	7:15 AM		8:43 AM	9:45 AM	10:43 AM		11:45 AM	12:15 PM	12:43 PM	1:15 PM	1:45 PM	2:43 PM	3:15 PM	3:45 PM	
Dep	Yonkers			9:02 AM		11:02 AM			12:34 PM	1:02 PM	1:34 PM		3:02 PM	3:34 PM		
Arr	New York	7:55 AM	8:45 AM	9:25 AM	10:25 AM	11:25 AM		12:25 PM	1:00 PM	1:25 PM	2:00 PM	2:25 PM	3:25 PM	4:00 PM	4:25 PM	

Exhibit D-37 - Alternative 125 – Eastbound Timetable (PM)

Stations/Train Numbers		HST-16	HST-18	48	HST-20	68	HST-22	64	HST-24	HST-26	NFL-28	HST-28	HST-30
Dep	Niagara Falls (New Station)			Train originates in Chicago		Train originates in Montreal		12:20 PM			5:20 PM		
Arr	Buffalo							1:00 PM			6:00 PM		
Dep	Exchange (New Station)	12:15 PM	1:15 PM		2:15 PM		3:15 PM	1:05 PM	4:15 PM	5:15 PM		6:15 PM	7:15 PM
Arr	Rochester (HST)	12:54 PM	1:54 PM		2:54 PM		3:54 PM		4:54 PM	5:54 PM		6:54 PM	7:54 PM
Dep	Rochester (HST)	12:57 PM	1:57 PM		2:57 PM		3:57 PM		4:57 PM	5:57 PM		6:57 PM	7:57 PM
Arr	Rochester (Central Ave)			11:09 AM				2:02 PM					
Dep	Rochester (Central Ave)			11:17 AM				2:06 PM					
Arr	Syracuse (HST)	1:39 PM	2:39 PM		3:39 PM		4:39 PM		5:39 PM	6:39 PM		7:39 PM	8:39 PM
Dep	Syracuse (HST)	1:43 PM	2:43 PM		3:43 PM		4:43 PM		5:43 PM	6:43 PM		7:43 PM	8:43 PM
Arr	Syracuse (RTC)			12:37 PM				3:24 PM					
Dep	Syracuse (RTC)			12:47 PM				3:29 PM					
Arr	Rome							4:07 PM					
Dep	Rome							4:08 PM					
Arr	Utica			1:40 PM				4:22 PM					
Dep	Utica			1:47 PM				4:25 PM					
Arr	Amsterdam							5:23 PM					
Dep	Amsterdam							5:25 PM					
Arr	Schenectady			3:03 PM				5:43 PM					
Dep	Schenectady			3:09 PM		4:45 PM		5:46 PM					
Arr	Albany-Rensselaer	3:00 PM	4:00 PM	3:50 PM	5:00 PM	5:20 PM	6:00 PM	6:25 PM	7:00 PM	8:00 PM		9:00 PM	10:00 PM
Dep	Albany-Rensselaer	3:10 PM	4:10 PM	4:20 PM	5:10 PM	5:40 PM	6:10 PM	6:40 PM	7:10 PM	8:10 PM		9:10 PM	10:10 PM
Dep	Hudson	3:34 PM	4:34 PM		5:34 PM	6:04 PM	6:34 PM	7:04 PM	7:34 PM	8:34 PM		9:34 PM	10:34 PM
Dep	Rhinecliff	3:55 PM	4:55 PM		5:55 PM	6:25 PM	6:55 PM	7:25 PM	7:55 PM	8:55 PM		9:55 PM	10:55 PM
Dep	Poughkeepsie		5:09 PM	5:21 PM		6:39 PM	7:09 PM	7:39 PM		9:09 PM		10:09 PM	11:09 PM
Dep	Croton	4:43 PM	5:45 PM	6:06 PM	6:43 PM	7:15 PM	7:45 PM	8:15 PM	8:43 PM	9:45 PM		10:45 PM	11:45 PM
Dep	Yonkers	5:02 PM			7:02 PM	7:34 PM		8:34 PM	9:02 PM	10:04 PM		11:04 PM	12:04 AM
Arr	New York	5:25 PM	6:25 PM	7:00 PM	7:25 PM	8:00 PM	8:25 PM	9:00 PM	9:25 PM	10:30 PM		11:30 PM	12:30 AM

Exhibit D-38 - Alternative 125 – Westbound Timetable (AM)

Stations/Train Numbers		HST-01	NFL-01	HST-03	HST-05	63	HST-07	NFL-07	69	HST-09	HST-11	281	HST-13
Dep	New York	4:15 AM		6:15 AM	7:15 AM	7:45 AM	8:15 AM		8:45 AM	9:15 AM	10:15 AM	10:45 AM	11:15 AM
Dep	Yonkers	4:37 AM		6:37 AM		8:07 AM	8:37 AM		9:07 AM		10:37 AM	11:07 AM	
Dep	Croton	4:57 AM		6:57 AM	7:54 AM	8:27 AM	8:57 AM		9:27 AM	9:54 AM	10:57 AM	11:27 AM	11:54 AM
Dep	Poughkeepsie	5:34 AM			8:31 AM	9:04 AM			10:04 AM	10:31 AM		12:04 PM	12:31 PM
Dep	Rhinecliff	5:47 AM		7:44 AM	8:44 AM	9:17 AM	9:44 AM		10:17 AM	10:44 AM	11:44 AM	12:17 PM	12:44 PM
Dep	Hudson	6:09 AM		8:07 AM	9:07 AM	9:39 AM	10:07 AM		10:39 AM	11:07 AM	12:07 PM	12:39 PM	1:07 PM
Arr	Albany-Rensselaer	6:30 AM		8:30 AM	9:30 AM	10:00 AM	10:30 AM		11:00 AM	11:30 AM	12:30 PM	1:00 PM	1:30 PM
Dep		6:40 AM		8:40 AM	9:40 AM	10:20 AM	10:40 AM		11:20 AM	11:40 AM	12:40 PM	1:15 PM	1:40 PM
Arr	Schenectady					10:39 AM			11:39 AM			1:34 PM	
Dep						10:41 AM						1:36 PM	
Arr	Amsterdam					10:56 AM						1:51 PM	
Dep						10:58 AM						1:53 PM	
Arr	Utica					11:55 AM						2:50 PM	
Dep						11:58 AM						2:53 PM	
Arr	Rome					12:13 PM						3:08 PM	
Dep						12:14 PM						3:09 PM	
Arr	Syracuse (HST)	7:54 AM		9:54 AM	10:54 AM		11:54 AM			12:54 PM	1:54 PM		2:54 PM
Dep		7:58 AM		9:58 AM	10:58 AM		11:58 AM			12:58 PM	1:58 PM		2:58 PM
Arr	Syracuse (RTC)					1:00 PM						3:55 PM	
Dep						1:04 PM						3:59 PM	
Arr	Rochester (HST)	8:40 AM		10:40 AM	11:40 AM	Train continues to Toronto	12:40 PM		Train continues to Montreal	1:40 PM	2:40 PM		3:40 PM
Dep		8:43 AM		10:43 AM	11:43 AM		12:43 PM			1:43 PM	2:43 PM		3:43 PM
Arr	Rochester (Central Ave)					2:16 PM						5:11 PM	
Dep						2:20 PM						5:15 PM	
Arr	Buffalo Exchange (New Station)	9:25 AM		11:25 AM	12:25 PM	3:25 PM	1:25 PM			2:25 PM	3:25 PM	6:20 PM	4:25 PM
Dep			9:40 AM			3:30 PM		1:40 PM				6:30 PM	
Arr	Niagara Falls (New Station)		10:17 AM			4:25 PM		2:17 PM				7:25 PM	

Exhibit D-39 - Alternative 125 – Westbound Timetable (PM)

		HST-15	HST-17	283	HST-19	NFL-19	291	HST-21	49	HST-23	HST-25	HST-27	HST-29
Dep	New York	12:15 PM	1:15 PM	1:45 PM	2:15 PM		2:45 PM	3:15 PM	3:45 PM	4:15 PM	5:15 PM	6:15 PM	7:15 PM
Dep	Yonkers	12:37 PM		2:07 PM	2:37 PM		3:07 PM			4:37 PM		6:37 PM	
Dep	Croton	12:57 PM	1:54 PM	2:27 PM	2:57 PM		3:27 PM	3:54 PM	4:29 PM	4:57 PM	5:54 PM	6:57 PM	7:54 PM
Dep	Poughkeepsie		2:31 PM	3:04 PM			4:04 PM	4:31 PM	5:15 PM		6:31 PM		8:31 PM
Dep	Rhinecliff	1:44 PM	2:44 PM	3:17 PM	3:44 PM		4:17 PM	4:44 PM		5:44 PM	6:44 PM	7:44 PM	8:44 PM
Dep	Hudson	2:07 PM	3:07 PM	3:39 PM	4:07 PM		4:39 PM	5:07 PM		6:07 PM	7:07 PM	8:07 PM	9:07 PM
Arr	Albany-	2:30 PM	3:30 PM	4:00 PM	4:30 PM		5:00 PM	5:30 PM	6:25 PM	6:30 PM	7:30 PM	8:30 PM	9:30 PM
Dep	Rensselaer	2:40 PM	3:40 PM	4:15 PM	4:40 PM		5:20 PM	5:40 PM	7:00 PM	6:40 PM	7:40 PM	8:40 PM	9:40 PM
Arr	Schenectady			4:34 PM			5:39 PM		7:21 PM				
Dep				4:36 PM					7:27 PM				
Arr	Amsterdam			4:51 PM									
Dep				4:53 PM									
Arr	Utica			5:50 PM					8:41 PM				
Dep				5:53 PM					8:47 PM				
Arr	Rome			6:08 PM									
Dep				6:09 PM									
Arr	Syracuse (HST)	3:54 PM	4:54 PM		5:54 PM			6:54 PM		7:54 PM	8:54 PM	9:54 PM	10:54 PM
Dep		3:58 PM	4:58 PM		5:58 PM			6:58 PM		7:58 PM	8:58 PM	9:58 PM	10:58 PM
Arr	Syracuse (RTC)			6:55 PM					9:49 PM				
Dep				6:59 PM					9:58 PM				
Arr	Rochester (HST)	4:40 PM	5:40 PM		6:40 PM		Train continues to Rutland	7:40 PM	Train continues to Chicago	8:40 PM	9:40 PM	10:40 PM	11:40 PM
Dep		4:43 PM	5:43 PM		6:43 PM			7:43 PM		8:43 PM	9:43 PM	10:43 PM	11:43 PM
Arr	Rochester (Central Ave)			8:11 PM					11:10 PM				
Dep				8:15 PM					11:19 PM				
Arr	Buffalo Exchange (New Station)	5:25 PM	6:25 PM	9:20 PM	7:25 PM			8:25 PM	12:24 AM	9:25 PM	10:25 PM	11:25 PM	12:25 AM
Dep				9:30 PM		7:40 PM			12:35 AM				
Arr	Niagara Falls (New Station)			10:25 PM		8:17 PM							

2.1.8. Operating Plan Comparison

Exhibit D-40 shows average scheduled time (not simulated time) travel speeds between New York and Niagara Falls. The travel times and speeds are based on the average of all westbound services. For Alternative 125, the New York to Niagara Falls travel time and average speeds are based on a transfer to a Niagara Branch shuttle service in Buffalo. The alternatives all provide average speed improvements when compared with Current Conditions and the Base Alternative.

The alternatives differ in terms of the range of train-by-train trip time improvements on the Empire Corridor. For the Base, 90B, 110 and 125 (both express and regional), most train trips have the same scheduled travel time over the course of the day. Alternative 90A differs in that it provides some limited stops service with faster trip times (3 round trips New York – Niagara Falls with one additional round trip Albany – Niagara Falls). Exhibit D-40 presents average travel times between New York City and Niagara Falls. The scheduled trip times of Alternative 90A range from 7:50 to 8:30, with the overall average of 8:08.

When the data is presented solely for Albany to Buffalo (Exhibit D-41), the range of scheduled train speeds becomes more pronounced because the alternatives' capital improvements are focused in this area. The current scheduled speed across Empire Corridor West is 57 MPH. Each of the alternatives, including the Base Alternative, provides higher average speeds. The 125 Alternative provides the highest average speed – 108 MPH for Express service.

Exhibit D-40 - Average Scheduled Time Travel Speeds -New York to Niagara Falls

Trip Alternative	Average Travel Time (HH:MM)	Distance (Miles)	Average Speed (MPH)
Current Conditions	9:06	463	51
Base Alternative	9:06	465	51
Alternative 90A	8:08	465	57
Alternative 90B	7:36	465	61
Alternative 110	7:22	465	63
Alternative 125 (Express)	6:02	465	77
Alternative 125 (Regional)	8:40	465	54

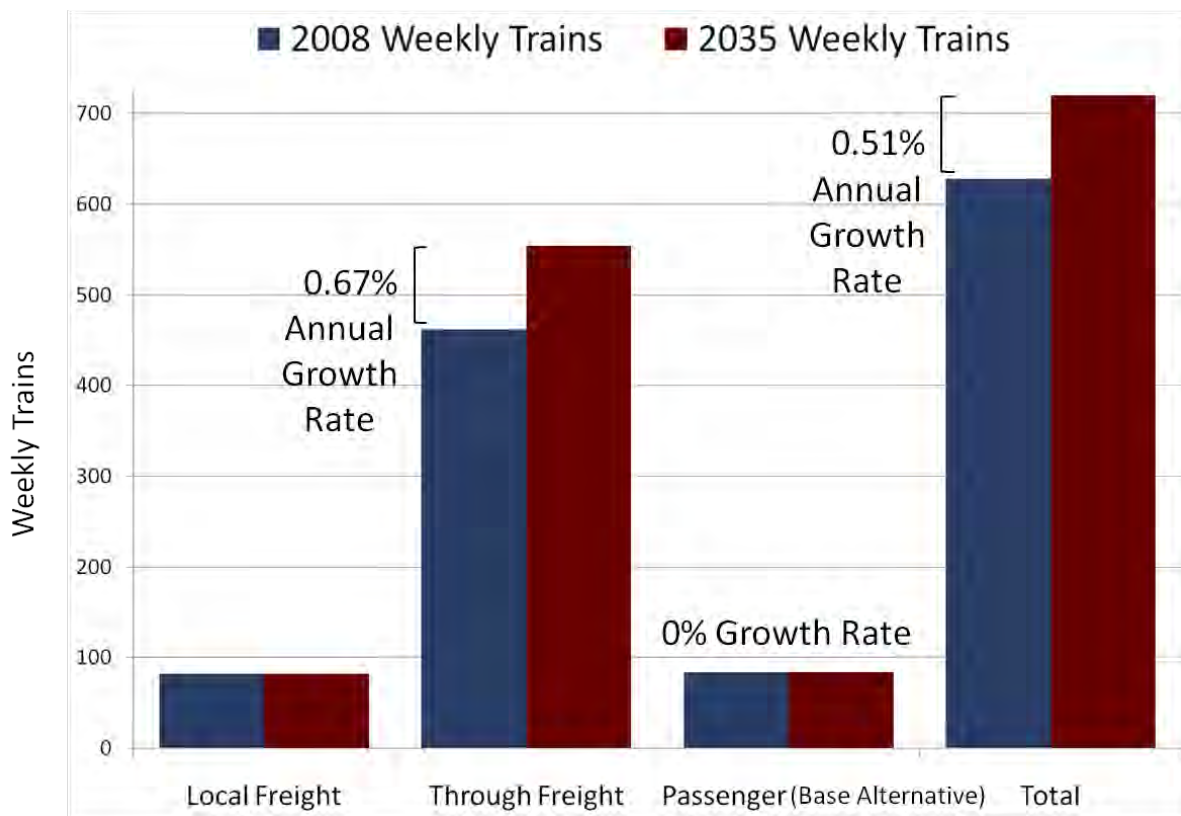
Exhibit D-41 - Average Scheduled Time Travel Speeds - Albany to Buffalo Exchange

Trip Alternative	Average Travel Time (HH:MM)	Distance (Miles)	Average Speed (MPH)
Current Conditions	5:14	298	57
Base Alternative	5:09	298	58
Alternative 90A	4:47	298	62
Alternative 90B	4:27	298	67
Alternative 110	4:15	298	70
Alternative 125 (Express)	2:45	298	108
Alternative 125 (Regional)	5:09	298	58

2.2. Future Freight Train Service

CSXT provided a detailed future freight operating plan for the corridor as part of the High Speed Rail Empire Corridor Program. The future freight operating plan includes CSXT business segment-by-segment assessments of future freight traffic and how it would be moved (by lengthening existing trains and/or adding trains).

Exhibit D-42 shows the current (2008) and Base Alternative train volumes on the Empire Corridor, broken down by local freight, through freight and passenger services. For the Base Alternative, no passenger service growth is included. CSXT freight projections include no growth in local freight and a growth of about 100 weekly through freight trains. This represents compounded annual growth of 0.67 percent for CSXT through freight trains and 0.51 for the corridor overall. The CSXT 2035 operating plan was held constant for all future alternatives – the Base and Alternatives 90A, 90B, 110 and 125.

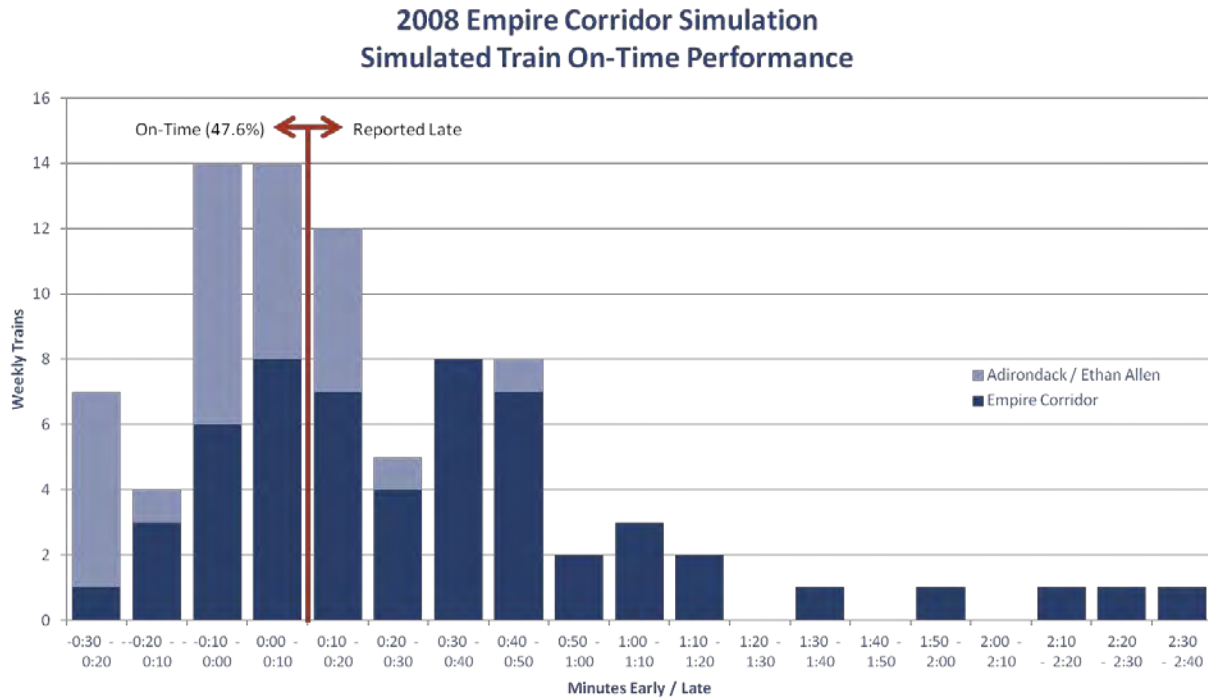
Exhibit D-42 - Weekly Empire Corridor CSXT Freight Train Movements – 2008 and 2035

3. Simulation Results

3.1. Current (2008) Operations

The RTC network simulation model was the subject of extensive calibration efforts to ensure that its 2008 results matched actual operations during that year. The calibration effort focused primarily on passenger train on-time performance and involved “tuning” the priorities of freight and passenger trains in the model’s dispatching logic.

Exhibit D-43 shows the resultant passenger train on-time performance for Empire Corridor West operations in 2008. The 47.6 percent on-time performance (based on the standard 10 minute lateness threshold) includes both Empire Corridor and Adirondack/Ethan Allen (Saratoga Springs – Albany-Rensselaer only) services. The figure shows the typical distribution of train lateness – some trains modestly early, most on-time and some very late (more than 2 hours late). The simulation result of 47.6 percent on-time arrivals is close to the actual Empire Corridor West 2008 on-time performance computed by the HNTB Team (57 percent). The actual data is averaged over the entire year whereas the simulation reflects seasonal high freight volumes (in essence, the busiest freight movement week of the year). Therefore, the RTC calibration is deemed to be reasonable, despite the lower OTP result.

Exhibit D-43 - 2008 Existing Operations – Simulated Train OTP

At the initiation of the High Speed Rail Empire Corridor program in 2008, Amtrak trains were operating at approximately 84 percent OTP between New York and Albany and 57 percent on-time between Albany and Niagara Falls. The average reported 2008 reliability for the entire Empire Corridor for 2008 was 77 percent.

3.1.1. Passenger Operations

Exhibit D-44 displays an RTC “string” (time-distance) chart for a 12-hour weekday morning period while Exhibit D-45 displays the same information of the following 12 hours (the evening period). The charts represent 24 hours of the 7+ day simulation. The “strings” (train traces) are color-coded according to which track is being used by each train – red for Track 1, blue for Track 2 and green for other tracks. Niagara Falls is at the top of the chart and Albany-Rensselaer is at the bottom. The slopes of the passenger trains (“P” prefixes) are steeper than those of the freight trains, indicating higher average speeds. The overall corridor shows that “right hand running” is a favored dispatching strategy in the RTC model with westbound trains on Track 1 and eastbound trains on Track 2. However, there are many exceptions and the corridor’s bidirectional signaling readily supports this type of complex dispatching.

The current passenger trains must serve Amsterdam on the north side (Track 1), Syracuse on the south side (Track 7), Rochester on the south side (Track 2) and Buffalo Depew on the south side (Track 2) in both directions. These constraints lead to a number of unusual train routings that deviate from the “right hand running” rule.

Exhibit D-46 shows the simulated on-time performance for 2008 passenger train operations. Overall, the 2008 RTC run shows a 47.6 percent on-time performance based on a 10 minute lateness threshold.

Exhibit D-44 - 2008 Existing Operations – AM String Chart

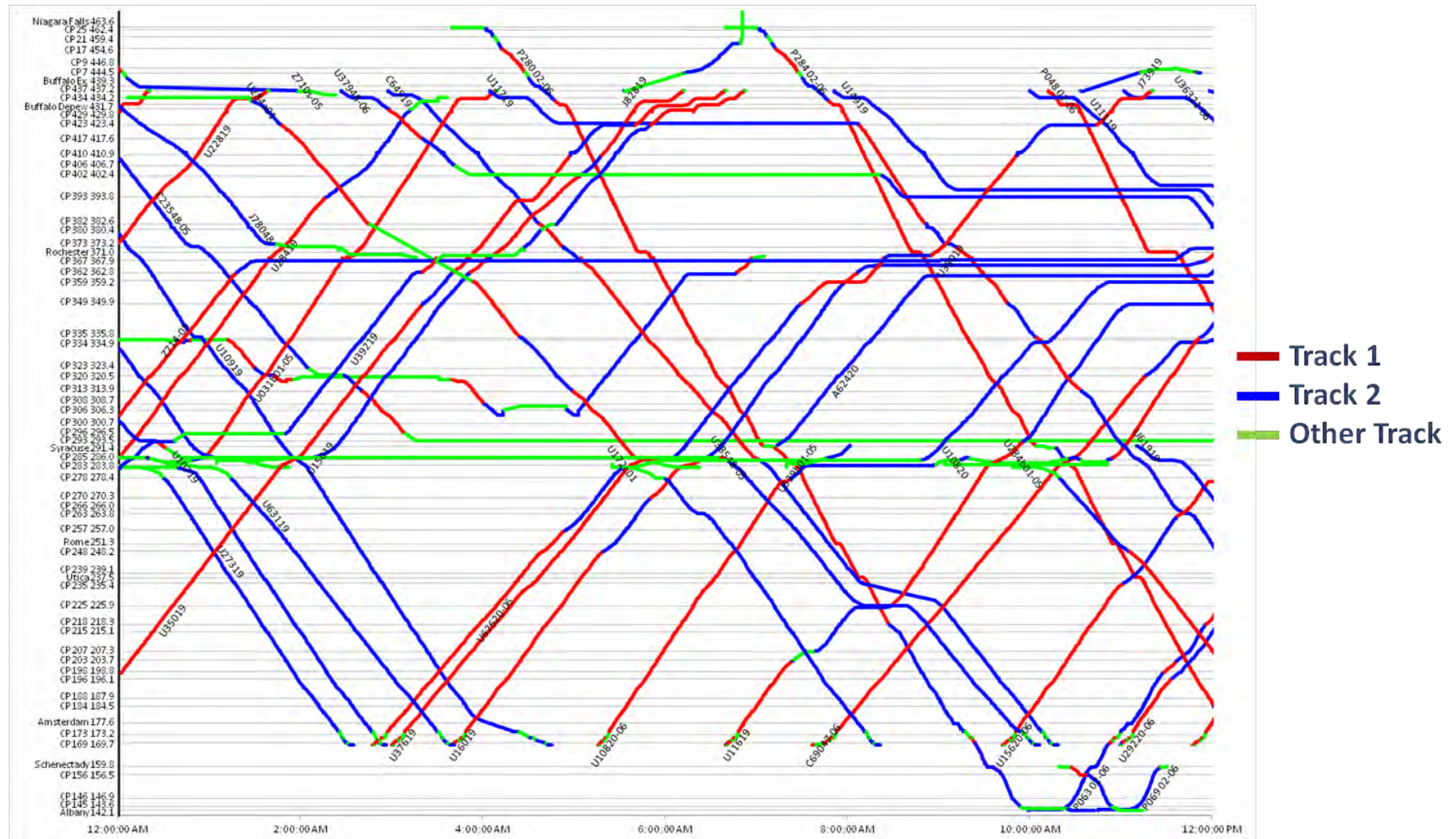


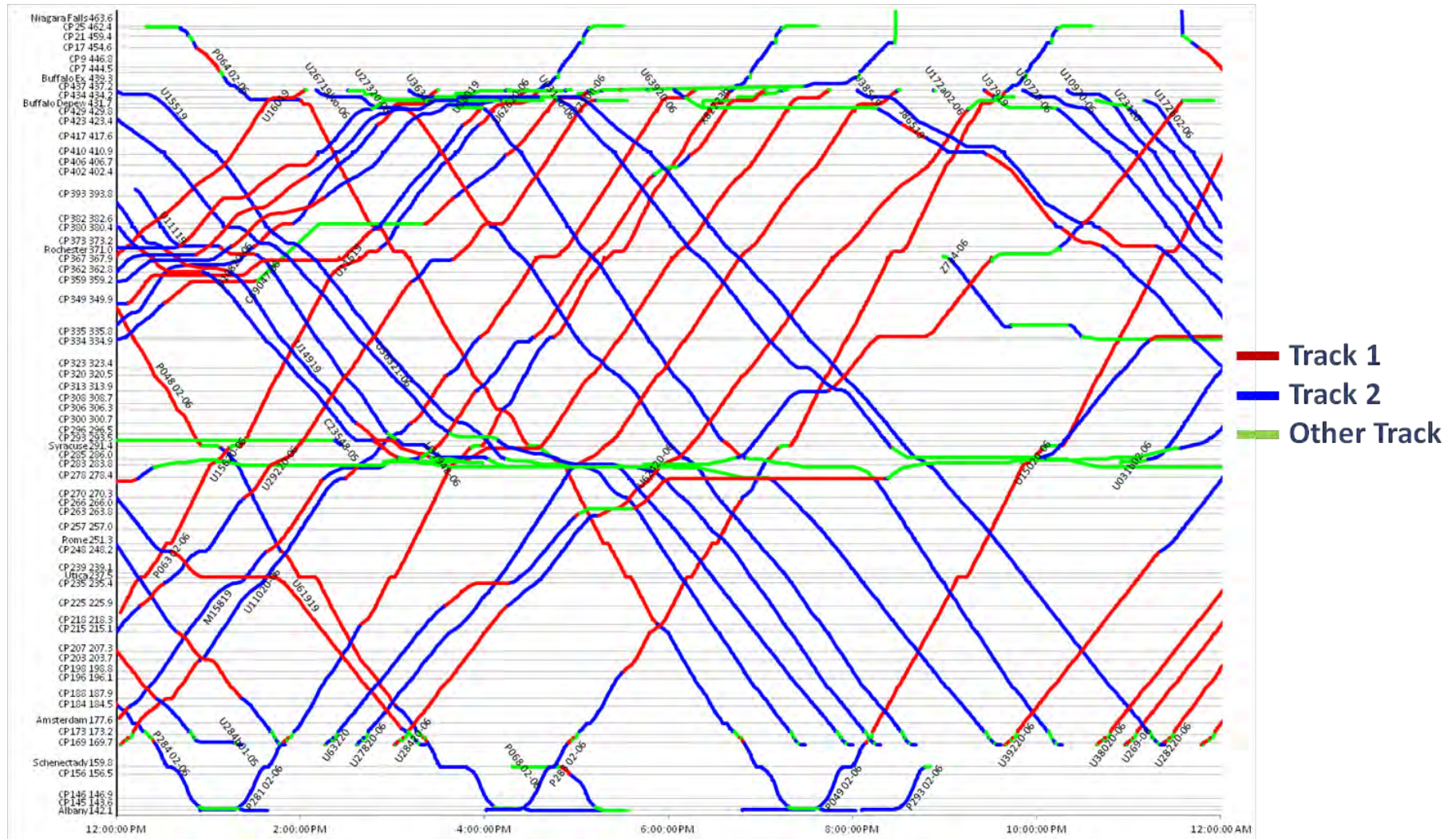
Exhibit D-45 - 2008 Existing Operations – PM String Chart

Exhibit D-46 - Existing (2008) Simulated On-Time Performance – Passenger Trains

Threshold (min. late)	1	5	10	15
Adirondack / EAE	60.7%	67.9%	75.0%	89.3%
Lake Shore Limited	0.0%	7.1%	21.4%	21.4%
Empire	26.2%	28.6%	38.1%	47.6%
LSL + Empire	19.6%	23.2%	33.9%	41.1%
Amtrak Total	33.3%	38.1%	47.6%	57.1%

3.1.2. Freight Operations

Exhibit D-47 shows simulated freight performance for the 2008 calibration model. For CSXT, schedule adherence is less of a concern (with some exceptions for high priority intermodal trains) than overall corridor flow and efficiency. Overall, the 2008 benchmark features 36.83 train minutes of delay (congestion ahead) per 100 freight train miles operated. Of the 721 freight trains in the simulation, an average speed of 27.4 MPH (including en route switching) was computed by the simulation software.

Exhibit D-47 - Existing (2008) Simulated Performance – Freight Trains

Train Group	Run-Time Train Count	Average Speed with Dwell	True Delay DD:HH:MM	Ideal Run Time DD:HH:MM	Train Miles	Delay per 100 Train Miles
Expedited*	247	32.2	15:12:16	63:16:23	61166.3	36.52
Freight**	474	21.8	13:06:10	85:00:32	51301.7	37.21
Total	721	27.4	28:18:26	149:16:55	112468.0	36.83

*Includes Auto, Intermodal, Guaranteed Intermodal

**Includes Bulk, Empty Unit Coal, Grain, Local, Merchandise, Road Switcher, Unit, Yard, Coal

Exhibit D-48 shows another important metric for CSXT – simulated trip time statistics (Selkirk Yard to Syracuse to Buffalo) and the standard deviation (statistical measure of variability) of this data. CSXT desires to see the shortest reasonable trip time and a small standard deviation in the variability of simulated trip time, representing consistency of service. Overall, measuring CSXT freight trip times between Selkirk Yard and Buffalo, the existing case RTC model shows an average trip time of 9:07, with a standard deviation of 2:40. The variability in trip time reflects a wide variety of freight train types (with different performance characteristics), variation in stopping patterns and congestion along the corridor.

Exhibit D-48 - Existing (2008) - Simulated Freight Trip Time Statistics and Reliability (Standard Deviation)

	Buffalo - Syracuse	Syracuse - Selkirk Yard	Syracuse - Buffalo	Selkirk Yard - Syracuse
Average	4:27:26	4:36:23	4:34:25	4:26:24
Min	3:06:16	2:58:46	2:48:31	2:49:52
Max	15:25:10	10:33:01	17:07:59	11:48:53
Std Dev	1:41:11	1:23:59	1:58:25	1:30:48

3.2. 2035 Base Alternative

3.2.1. Passenger Operations

The operating philosophy for the Base Alternative (No Action) is similar to that for current conditions. The platform edge constraints at Amsterdam, Syracuse, Rochester and Buffalo-Depew remain. Exhibit D-49 shows the 2035 Base Alternative simulation results for a typical AM period of 12 hours while Exhibit D-50 shows the comparable data for a typical PM period. The scheduled passenger train trip times reflect some tightening to take advantage of Base Alternative improvements at Albany-Rensselaer, between Albany-Rensselaer and Schenectady and at Syracuse. They also reflect some lengthening to account for the fact that the new Niagara Falls station is some two miles north of the present location with a track speed of just 20 MPH for these two additional miles.

The Base Alternative operations show use of the Rochester Area Third Track between CP 382 and CP 393. There is a pair of three-way freight train meets just after midnight in Exhibit D-49. At about 5:30 AM, Amtrak Train 280 benefits from a three-way meet at the same location, passing by both eastbound and westbound CSXT freight trains.

The Base Alternative capital improvements, coupled with no additional passenger train traffic to compound delays, produce a passenger train on-time performance of about 83 percent (based on the standard Amtrak lateness threshold of 10 minutes). Exhibit D-51 shows the breakdown, including on-time performance for a variety of lateness thresholds. The on-time performance improvement is nearly 35 percentage points versus the 2008 (current) operations RTC run.

Exhibit D-49 - 2035 Base Alternative– AM String Chart

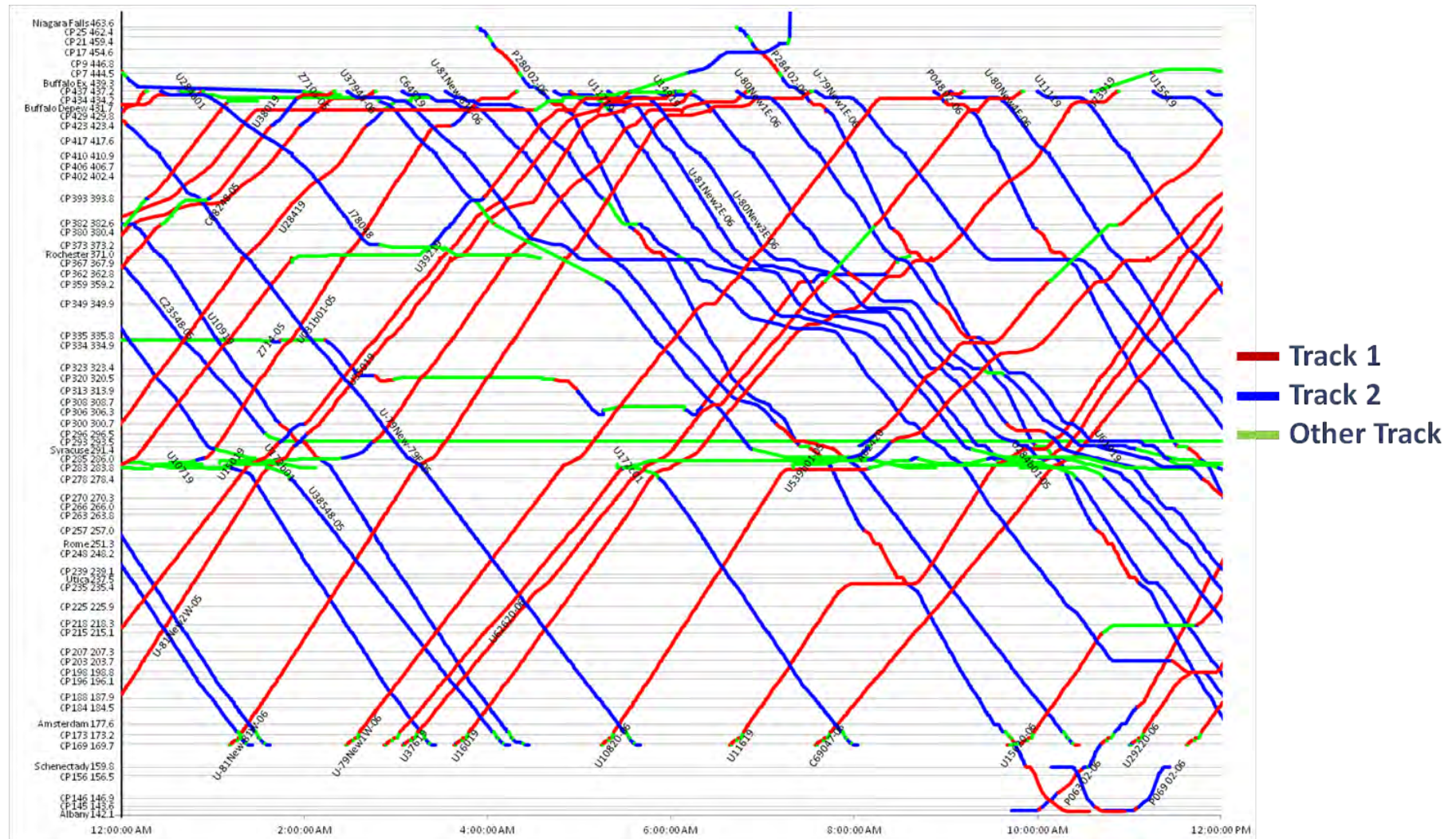


Exhibit D-50 - 2035 Base Alternative– PM String Chart

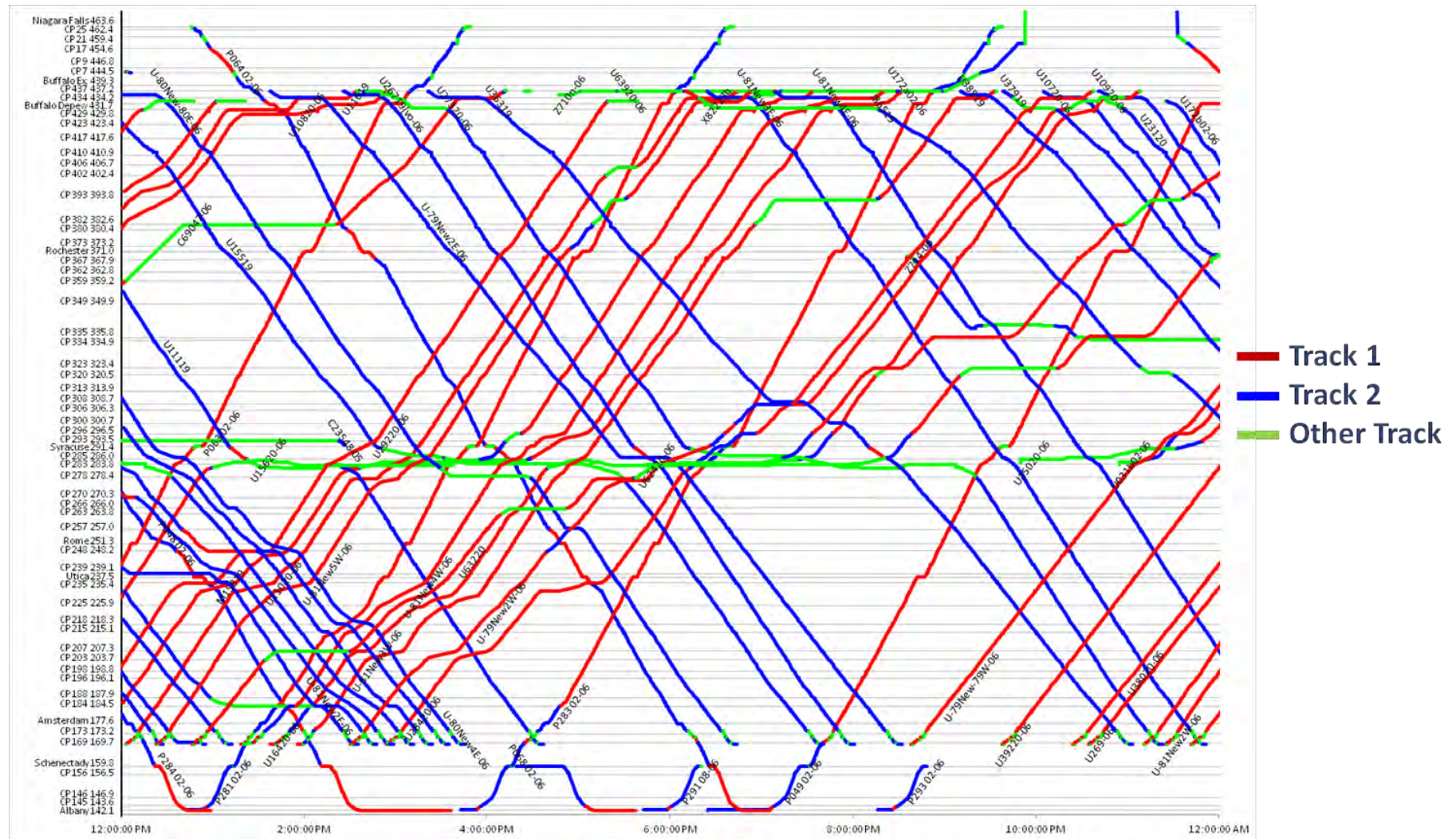


Exhibit D-51 - Base Alternative Simulated On-Time Performance – Passenger Trains

Threshold (min. late)	1	5	10	15
Adirondack / EAE	89.7%	93.1%	100.0%	100.0%
Lake Shore Limited	71.4%	71.4%	71.4%	78.6%
Empire	57.8%	64.4%	75.6%	82.2%
LSL + Empire	61.0%	66.1%	74.6%	81.4%
Amtrak Total	70.5%	75.0%	83.0%	87.5%

3.2.2. Freight Operations

Exhibit D-52 shows the simulated results for 2035 CSXT operations under the Base Alternative. Overall, the Base Alternative shows similar delay per 100 miles operated statistic (36.31 train delay-minutes per 100 miles operated versus the 2008 benchmark of 36.83 train delay-minutes). Freight volume increases by some 119 trains during the seven day simulation period. Average speed improves with the Base Alternative, increasing from the 2008 average speed of 27.4 MPH to 30.3 MPH in 2035. This reflects the fact that the majority of future CSXT growth is projected to be high priority intermodal trains; the performance of this group raises the average speed for the freight train population as a whole.

Exhibit D-52 - 2035 Base Alternative Simulated Performance – Freight Trains

Train Group	Run-Time Train Count	Average Speed with Dwell	True Delay DD:HH:MM	Ideal Run Time DD:HH:MM	Train Miles	Delay per 100 Train Miles
Expedited*	335	34.8	19:15:39	86:09:00	88534.3	31.96
Freight**	505	23.5	17:11:53	86:22:11	58780.8	42.86
Total	840	30.3	37:03:32	173:07:11	147315.1	36.31

*Includes Auto, Intermodal, Guaranteed Intermodal

**Includes Bulk, Empty Unit Coal, Grain, Local, Merchandise, Road Switcher , Unit, Yard, Coal

Exhibit D-53 shows freight trip times on the corridor in the 2035 Base Alternative. Overall, measuring CSXT freight trip times between Selkirk Yard and Buffalo, the Base Alternative RTC model shows an average trip time of 8:14 (versus 9:07 in the 2008 model), with a standard deviation of 1:37 (versus 2:40 in the 2008 model). The reduced variability (greater reliability) in trip time reflects the more predictable passenger train performance (which, in turn, results from the Albany, Albany-Schenectady, Syracuse and Rochester area improvements) as well as the future focus on better-performing intermodal trains.

Exhibit D-53 - 2035 Base Alternative - Simulated Freight Trip Time Statistics and Reliability (Standard Deviation)

	Buffalo - Syracuse	Syracuse - Selkirk Yard	Syracuse - Buffalo	Selkirk Yard - Syracuse
Average	4:04:16	4:06:31	4:11:14	4:14:33
Min	2:52:59	2:51:50	2:52:14	2:51:58
Max	16:30:37	9:07:45	8:57:31	9:15:37
Std Dev	1:22:23	1:15:07	0:57:51	1:20:34

3.3. 2035 Alternative 90A

Alternative 90A features passenger trains operating on shared passenger/freight tracks with a maximum operating speed of 90 MPH. In addition to track structure upgrades, it includes targeted capital projects along the corridor to reduce/eliminate conflicts between passenger and freight trains.

3.3.1. Passenger Operations

Exhibit D-54 shows the RTC time-distance “string” chart for a representative morning period for Alternative 90A while Exhibit D-55 shows the same information for the following 12 hours (PM period). The steeper slopes of the passenger trains (“P” train symbol prefix) are evident, including the four new round trips on the corridor. Overall, the corridor shows fluid operation with extensive use of the existing bidirectional signaling capability move higher priority trains around those with lower priority.

Exhibit D-54 - 2035 Alternative 90A – AM String Chart



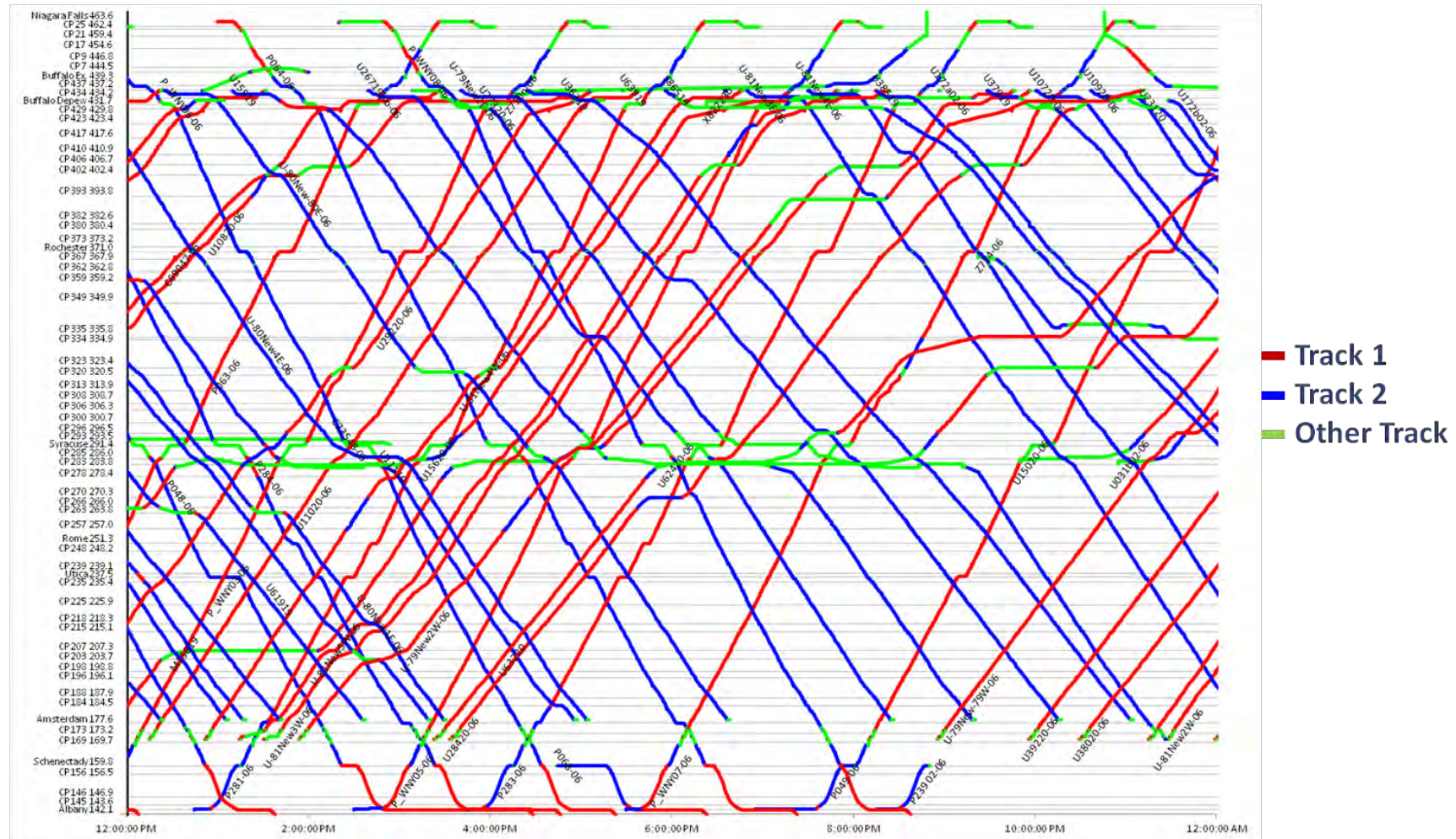
Exhibit D-55 - 2035 Alternative 90A – PM String Chart

Exhibit D-56 shows simulated passenger train on-time performance for Alternative 90A. The results exceed the program's goal of 90 percent OTP with simulated OTP of 92.4 percent, based on the standard Amtrak lateness tolerance of 10 minutes. The results exceed the Base Alternative OTP of 83 percent despite the addition of four passenger train round trips. The results indicate that the infrastructure investments of Alternative 90A more than compensate for the added corridor congestion stemming from the four express train round trips added in this alternative.

Exhibit D-56 - 2035 Alternative 90A Simulated On-Time Performance – Passenger Trains

Threshold (min. late)	1	5	10	15
Adirondack / EAE	76.9%	96.2%	100.0%	100.0%
Lake Shore Limited	100.0%	100.0%	100.0%	100.0%
Empire	86.8%	87.9%	89.0%	90.1%
LSL + Empire	88.6%	89.5%	90.5%	91.4%
Amtrak Total	86.3%	90.8%	92.4%	93.1%

3.3.2. Freight Operations

Exhibit D-57 shows the simulated results for 2035 CSXT operations under Alternative 90A. Overall, this alternative shows some degradation in freight train operation versus the 2008 case and the Base Alternative in terms of delay per 100 miles operated statistic (42.10 train delay-minutes per 100 miles operated versus the 2008 benchmark of 36.83 train delay-minutes and the Base Alternative value of 36.31). Average speed shows improvement over the 2008 value (29.4 MPH versus 27.4 MPH) and is close to the Base Alternative (29.4 versus 30.3 MPH). While there is some increased congestion in the corridor in Alternative 90A versus the two previous cases with half the passenger train frequency, the results of this case reflect the fact that the preponderance of future CSXT growth is projected to be high priority intermodal trains.

Exhibit D-57 - 2035 Alternative 90A Simulated Performance – Freight Trains

Train Group	Run-Time Train Count	Average Speed with Dwell	True Delay DD:HH:MM	Ideal Run Time DD:HH:MM	Train Miles	Delay per 100 Train Miles
Expedited*	334	33.6	24:07:01	85:04:17	88298.5	39.62
Freight**	502	23.1	18:17:23	87:12:54	58839.3	45.83
Total	836	29.4	42:24:24	172:17:11	147137.8	42.10

*Includes Auto, Intermodal, Guaranteed Intermodal

**Includes Bulk, Empty Unit Coal, Grain, Local, Merchandise, Road Switcher, Unit, Yard, Coal

Exhibit D-58 shows average CSXT freight train trip times over the corridor in the Alternative 90A RTC run. Overall (Selkirk Yard to Buffalo, in both directions), Alternative 90A shows minor degradation versus the Base Alternative (8:23 versus 8:14) and significant improvement over today's operation (8:23 versus 9:07). The trend in freight train reliability, as measured by the standard deviation of trip times over the corridor shows similar results. The Alternative 90A results show a standard deviation of 2:04 versus the Base Alternative value of 1:37 and the 2008 case value of 2:40.

Exhibit D-58 - 2035 Alternative 90A - Simulated Freight Trip Time Statistics and Reliability (Standard Deviation)

	Buffalo - Syracuse	Syracuse - Selkirk Yard	Syracuse - Buffalo	Selkirk Yard - Syracuse
Average	4:04:20	3:55:31	4:31:35	4:11:12
Min	2:51:08	2:48:55	3:01:12	2:45:41
Max	15:41:40	9:40:05	7:52:10	9:02:59
Std Dev	1:20:26	1:04:27	0:54:38	1:21:22

3.4. 2035 Alternative 90B

Alternative 90B constructs a new dedicated passenger-only third track within the corridor, along with connections to the existing shared use tracks and sections of passenger-only fourth track to support “flying meets” between passenger trains. The existing shared use tracks remain at their current maximum speed of 79 MPH.

3.4.1. Passenger Operations

Collectively, Exhibit D-59 and Exhibit D-60 show a representative 24 hour period of simulated Alternative 90B operations. The third and fourth passenger-only tracks are represented in green and use of these tracks show the steeply-sloped higher speed passenger trains. The use of the existing shared use tracks in Syracuse, Rochester and the Buffalo Exchange Street area (CP 437) can also be seen as these green lines change color briefly at those locations. The passenger train movements across the shared used tracks to access south side platforms at Syracuse, Rochester and Buffalo Depew do not appear to significantly delay freight trains, which have crossing path conflicts at these locations.

Exhibit D-59 - 2035 Alternative 90B – AM String Chart

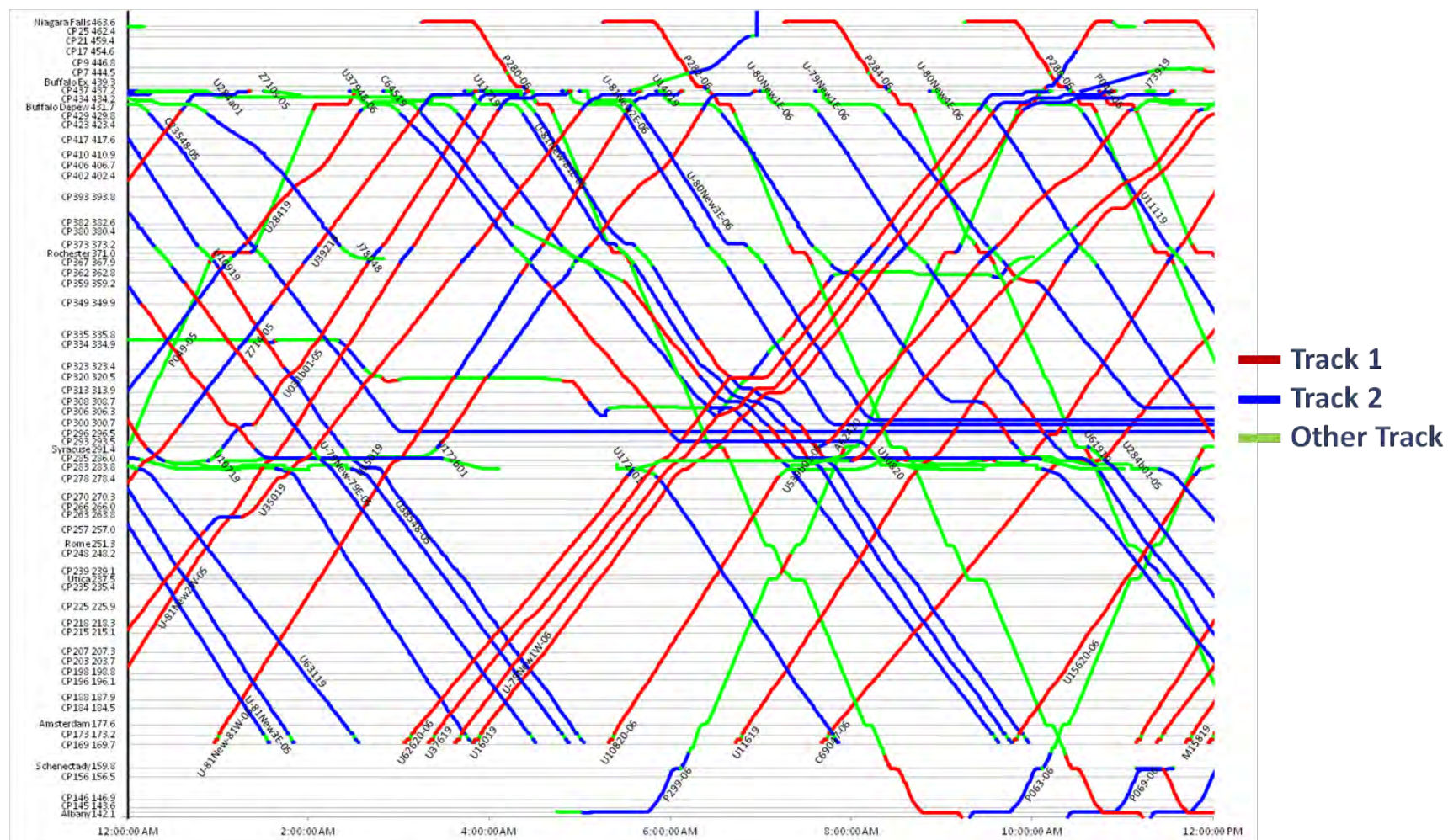


Exhibit D-60 - 2035 Alternative 90B – PM String Chart

Exhibit D-61 shows simulated passenger train on-time performance for Alternative 90B. The results exceed the program's goal of 90 percent OTP with simulated OTP of 95.4 percent, based on the standard Amtrak lateness tolerance of 10 minutes. These results are notable in that, compared with the previously-presented RTC cases, the improved OTP was achieved while at same time significantly tightening the scheduled passenger train times.

Exhibit D-61 - 2035 Alternative 90B On-Time Performance – Passenger Trains

Threshold (min. late)	1	5	10	15
Adirondack / EAE	64.3%	83.3%	83.3%	97.6%
Lake Shore Limited	100.0%	100.0%	100.0%	100.0%
Empire	99.0%	99.0%	100.0%	100.0%
LSL + Empire	99.1%	99.1%	100.0%	100.0%
Amtrak Total	89.5%	94.8%	95.4%	99.3%

3.4.2. Freight Operations

Exhibit D-62 shows the simulated results for 2035 CSXT operations under Alternative 90B. Overall, this alternative shows improvement in freight train operation versus the 2008 case and the Base Alternative in terms of delay per 100 miles operated statistic (32.78 train delay-minutes per 100 miles operated versus the 2008 benchmark of 36.83 train delay-minutes and the Base Alternative value of 36.31). Average speed shows improvement over the 2008 value (31.1 MPH versus 27.4 MPH) and over the Base Alternative (31.1 versus 30.3 MPH). While this alternative introduces some passenger-freight crossing conflicts at Syracuse, Rochester and CP 437, the overall separation of freight and passenger trains along the corridor clearly have reliability benefits for both services.

Exhibit D-62 - 2035 Alternative 90B Simulated Performance – Freight Trains

Train Group	Run-Time Train Count	Average Speed with Dwell	True Delay DD:HH:MM	Ideal Run Time DD:HH:MM	Train Miles	Delay per 100 Train Miles
Expedited*	335	36.3	17:04:03	83:16:50	87925.6	28.12
Freight**	510	23.4	16:16:43	91:15:59	60852.1	39.51
Total	845	31.1	33:20:46	175:08:49	148777.7	32.78

*Includes Auto, Intermodal, Guaranteed Intermodal

**Includes Bulk, Empty Unit Coal, Grain, Local, Merchandise, Road Switcher, Unit, Yard, Coal

Exhibit D- shows average CSXT freight train trip times over the corridor in the Alternative 90B RTC run. Overall (Selkirk Yard to Buffalo, in both directions), Alternative 90B shows modest improvement in trip time versus the Base Alternative (8:09 versus 8:14) and significant improvement over today's operation (8:09 versus 9:07). The Alternative 90B results show modest increases in freight train trip time variability, as measured by a standard deviation of 1:51 versus the Base Alternative value of 1:37. The results are significantly improved versus the 2008 case value of 2:40.

Exhibit D-63 - 2035 Alternative 90B - Simulated Freight Trip Time Statistics and Reliability (Standard Deviation)

	Buffalo - Syracuse	Syracuse - Selkirk Yard	Syracuse - Buffalo	Selkirk Yard - Syracuse
Average	4:17:19	4:09:00	4:25:20	3:49:54
Min	2:47:12	2:47:04	2:51:51	2:47:30
Max	17:09:38	12:19:13	7:02:44	7:45:39
Std Dev	1:46:01	1:32:33	0:57:25	1:03:00

3.5. 2035 Alternative 110

Alternative 110, similar to Alternative 90B, features a new dedicated passenger-only track within the Empire Corridor. The track is designed for a maximum operating speed of 110 MPH. A dedicated fourth track is provided at some locations to support “flying meets” between opposing direction trains; this track is designed for a maximum operating speed of 90 MPH.

3.5.1. Passenger Operations

A representative 24 hour RTC simulation set of time-distance string charts are shown in Exhibit D-64 (AM period) and Exhibit D-65 (PM period). As with Alternative 90B, the dedicated third and fourth tracks are shown in green. The slopes of the passenger train plots are steeper than 90B, indicating the faster average speeds versus the previous alternative.

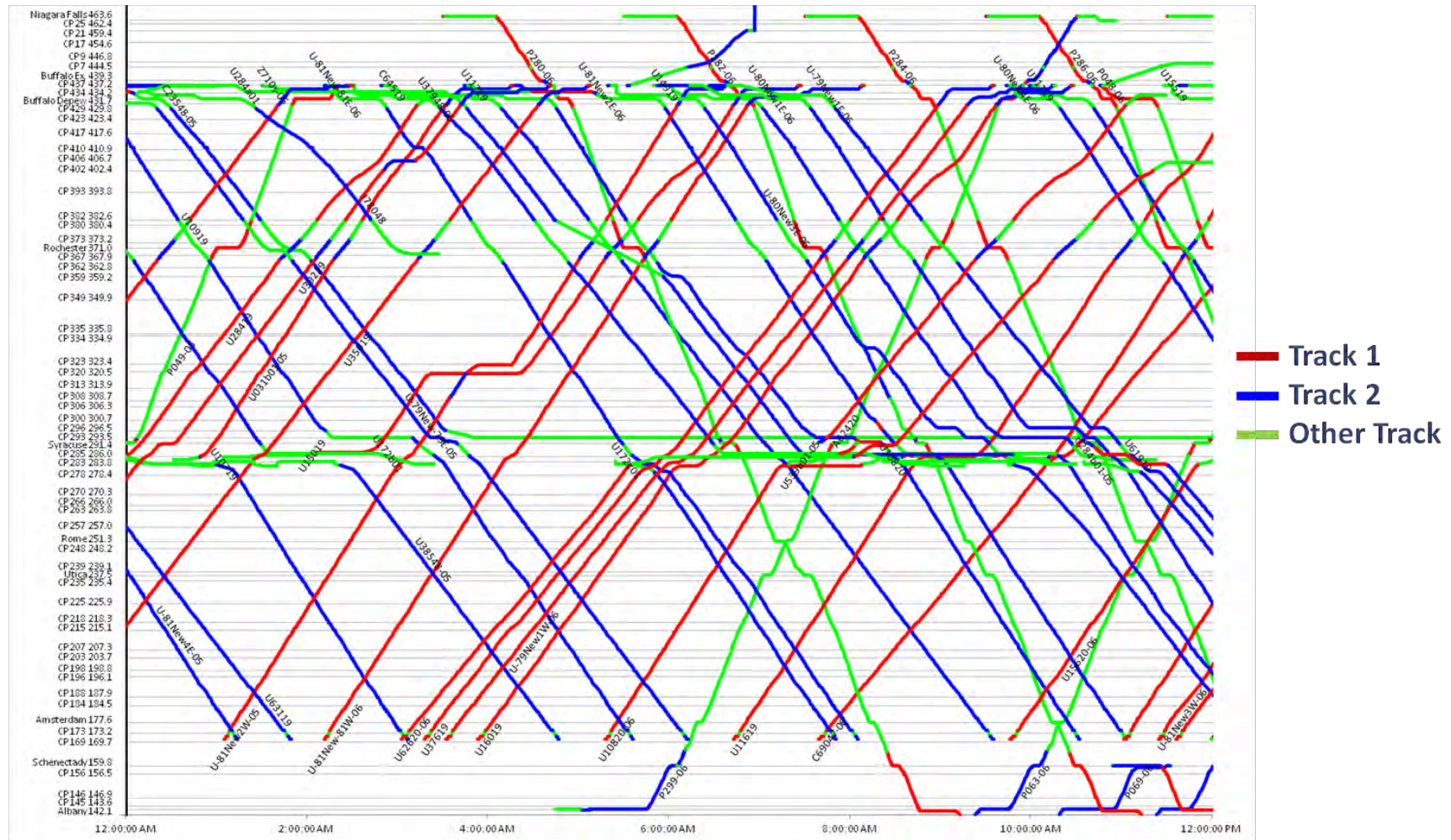
Exhibit D-64 - 2035 Alternative 110 – AM String Chart

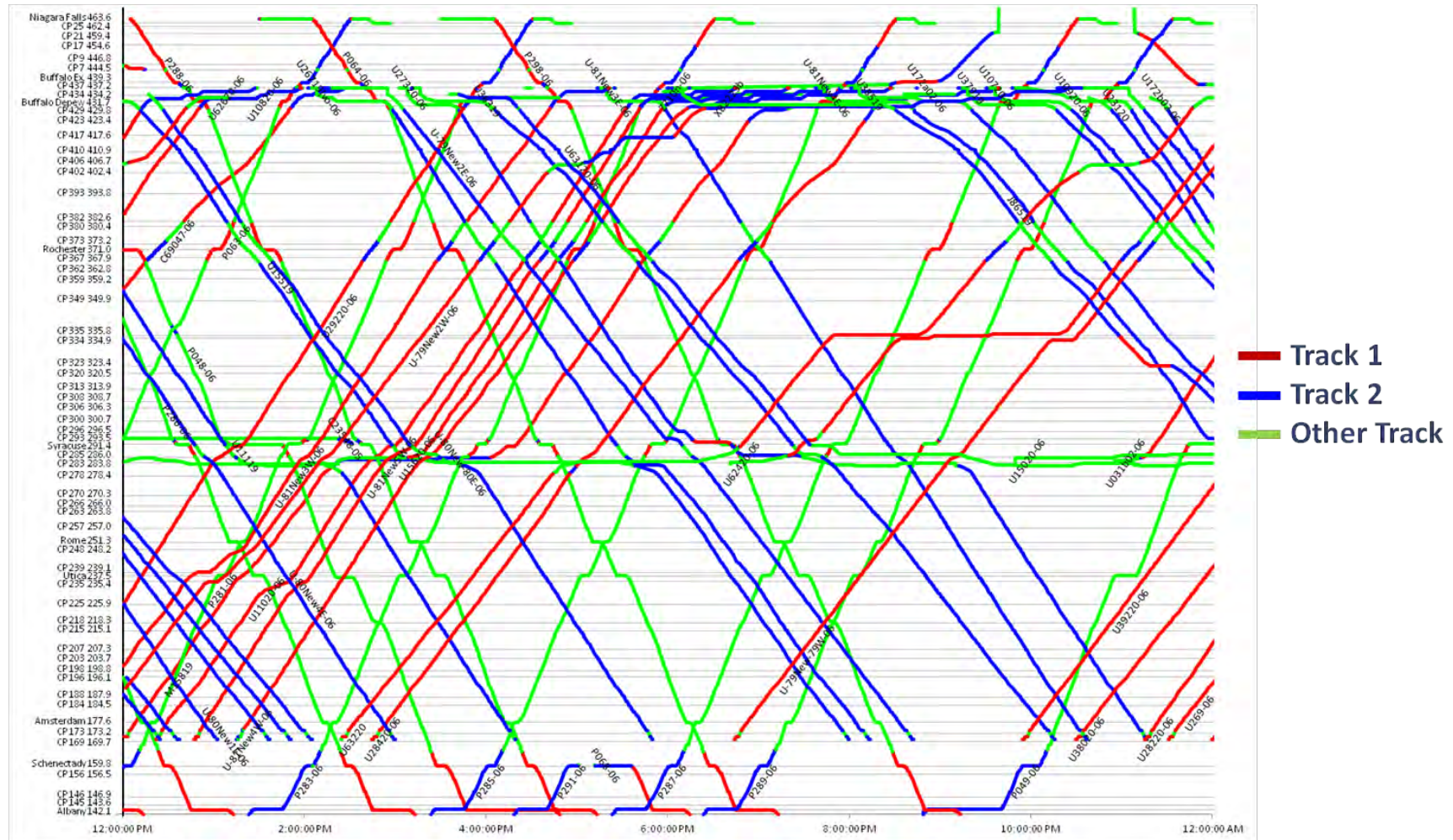
Exhibit D-65 - 2035 Alternative 110 – PM String Chart

Exhibit D-66 shows simulated passenger train on-time performance for Alternative 110. The results exceed the program's goal of 90 percent OTP with simulated OTP of 94.9 percent, based on the standard Amtrak lateness tolerance of 10 minutes. These results are notable in that, compared with the previously-presented RTC cases, the improved OTP was achieved while at same time significantly tightening the scheduled passenger train times.

Exhibit D-66 - 2035 Alternative 110 Simulated On-Time Performance – Passenger Trains

Threshold (min. late)	1	5	10	15
Adirondack / EAE	75.0%	75.0%	75.0%	92.9%
Lake Shore Limited	100.0%	100.0%	100.0%	100.0%
Empire	97.9%	99.0%	100.0%	100.0%
LSL + Empire	98.2%	99.1%	100.0%	100.0%
Amtrak Total	93.5%	94.2%	94.9%	98.6%

3.5.2. Freight Operations

Exhibit D-67 shows the simulated results for 2035 CSXT operations under Alternative 110. Overall, this alternative has comparable results to Alternative 90B and shows improvement in freight train operation versus the 2008 case and the Base Alternative in terms of delay per 100 miles operated statistic (34.95 train delay-minutes per 100 miles operated versus the 2008 benchmark of 36.83 train delay-minutes and the Base Alternative value of 36.31). Average speed shows improvement over the 2008 value (30.8 MPH versus 27.4 MPH) and over the Base Alternative (30.8 versus 30.3 MPH). While this alternative introduces some passenger-freight crossing conflicts at Syracuse, Rochester and CP 437, the overall separation of freight and passenger trains along the corridor clearly have reliability benefits for both services.

Exhibit D-67 - 2035 Alternative 110 Simulated Performance – Freight Trains

Train Group	Run-Time Train Count	Average Speed with Dwell	True Delay DD:HH:MM	Ideal Run Time DD:HH:MM	Train Miles	Delay per 100 Train Miles
Expedited*	339	35.9	18:15:13	84:20:16	89191.1	30.09
Freight**	509	23.2	17:17:16	91:10:26	60592.1	42.11
Total	848	30.8	36:08:29	176:06:42	149783.2	34.95

*Includes Auto, Intermodal, Guaranteed Intermodal

**Includes Bulk, Empty Unit Coal, Grain, Local, Merchandise, Road Switcher, Unit, Yard, Coal

Exhibit D-68 shows average CSXT freight train trip times over the corridor in the Alternative 110 RTC run. Overall (Selkirk Yard to Buffalo, in both directions), Alternative 110 shows modest improvement in trip time versus the Base Alternative (8:04 versus 8:14) and significant improvement over today's operation (8:04 versus 9:07). The Alternative 110 results show modest increases in freight train trip time variability, as measured by a standard deviation of 1:39 versus the Base Alternative value of 1:37. The results are significantly improved versus the 2008 case value of 2:40.

Exhibit D-68 - 2035 Alt 110 - Simulated Freight Trip Time Statistics and Reliability (Standard Deviation)

	Buffalo - Syracuse	Syracuse - Selkirk Yard	Syracuse - Buffalo	Selkirk Yard - Syracuse
Average	4:11:11	4:09:31	4:40:11	3:57:39
Min	2:47:06	2:46:08	2:54:10	2:48:17
Max	15:11:32	22:34:40	10:41:25	8:56:18
Std Dev	1:23:48	1:58:42	1:37:34	1:17:32

3.6. 2035 Alternative 125

Alternative 125 features a dedicated high speed rail alignment that diverges from the existing Corridor between Albany-Rensselaer and Buffalo. This alignment does not serve all existing Empire Corridor stations in this segment. Therefore, the existing service is retained on the shared passenger/freight corridor but no improvements to the existing shared used tracks are included except for those embodied in the Base Alternative.

3.6.1. Passenger Operations

Alternative 125 time-distance “string” charts are shown in Exhibit D-69 and Exhibit D-70. The 125 MPH dedicated high speed corridor tracks are represented by the purple and light blue lines. Operation of Base Alternative freight trains and the four round trip “legacy” passenger train service is represented by the red, blue and green colors used in the time-distance charts of the other alternatives. The dedicated high speed corridor was not simulated as its full double track configuration (no train meets or overtakes) and hourly headway supports highly reliable service.

Exhibit D-69 - 2035 Alternative 125 – AM String Chart

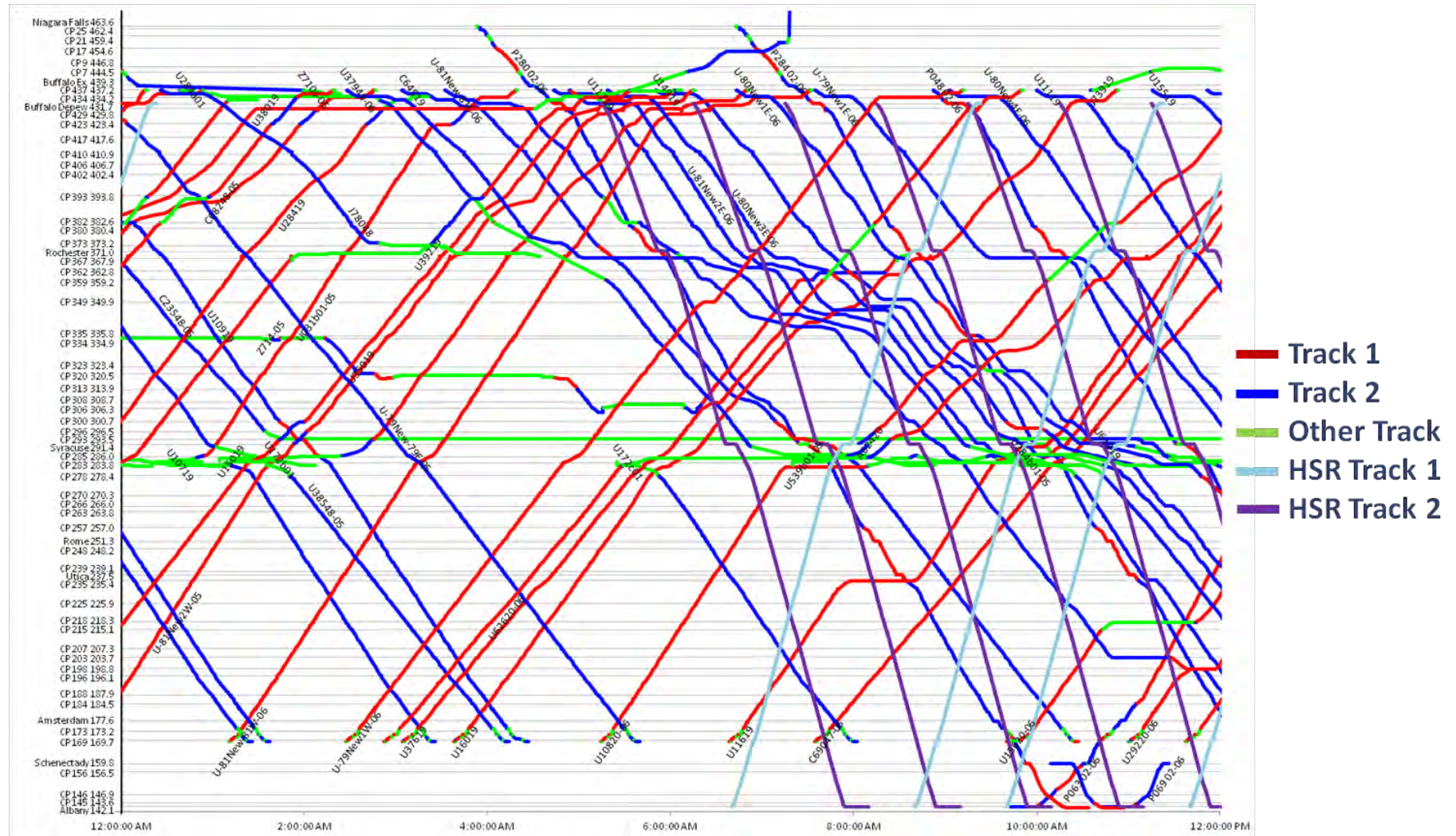


Exhibit D-70 - 2035 Alternative 125 – PM String Chart

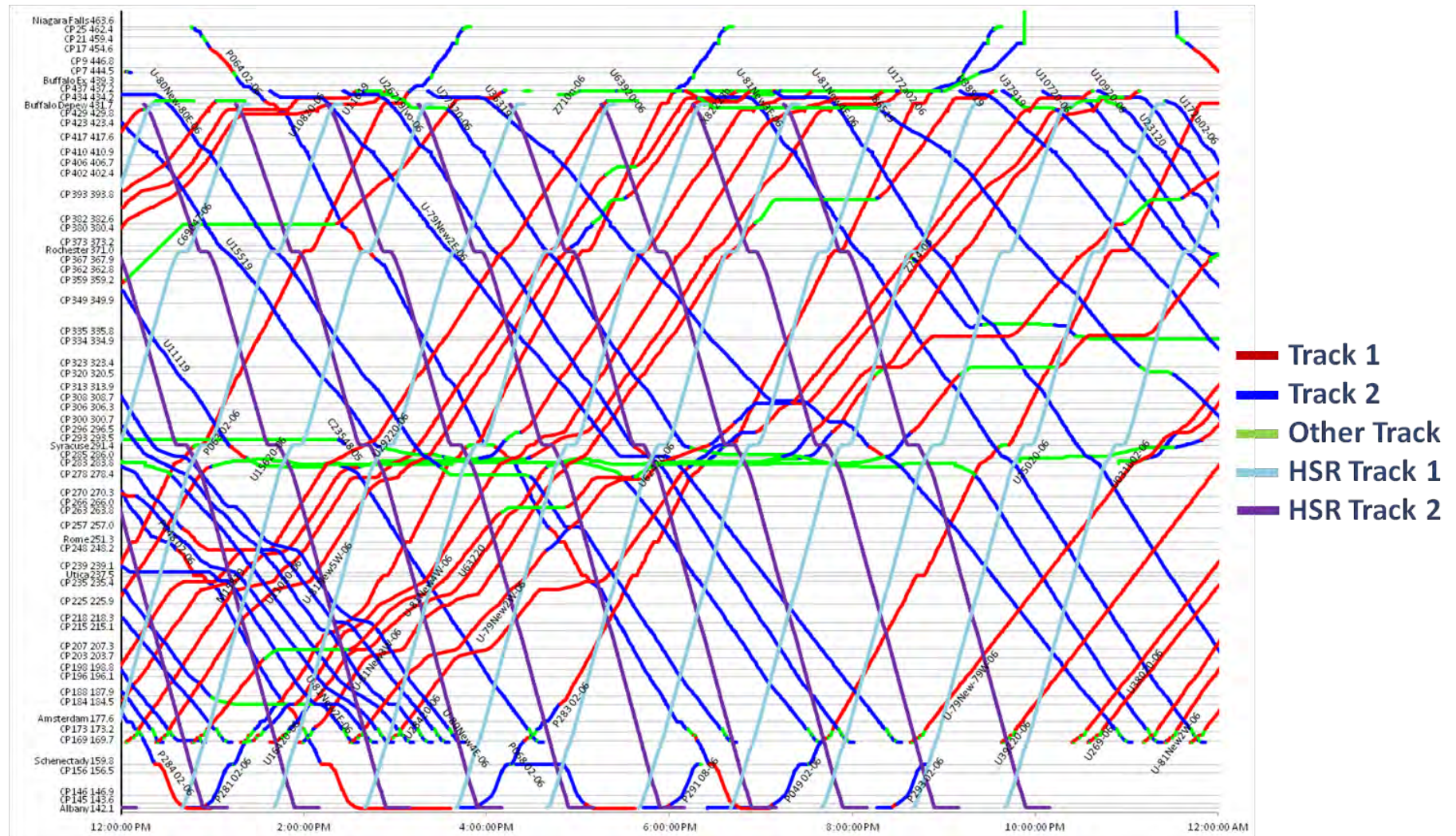


Exhibit D-71 shows passenger train on-time performance in the Alternative 125 case. The “legacy” results are the same as the Base Alternative results, with an OTP result of 83 percent (based on a 10 minute lateness threshold). The dedicated two-track high speed rail line is assumed to have an OTP of 100 percent. Overall, the weighted average of the passenger train services is 95.6 percent, significantly exceeding the program goal of 90 percent.

Exhibit D-71 - 2035 Alternative 125 Simulated On-Time Performance

Threshold (min. late)	1	5	10	15
Adirondack / EAE	89.7%	93.1%	93.4%	100.0%
Lake Shore Limited	71.4%	71.4%	71.4%	78.6%
Empire	57.8%	64.4%	75.6%	82.2%
LSL + Empire	61.0%	66.1%	74.6%	81.4%
High Speed Rail	100.0%	100.0%	100.0%	100.0%
Passenger Train Overall	91.3%	92.6%	95.6%	96.3%

3.6.2. Freight Operations

Exhibit D-72 shows freight train results for Alternative 125 simulation. These are identical to the Base Alternative Overall, Alternative 125 shows virtually the same delay per 100 miles operated statistic (36.31 train delay-minutes per 100 miles operated versus the 2008 benchmark of 36.83 train delay-minutes). Freight volume increases by some 119 trains during the seven day simulation period. Average speed actually improves with the Alternative 125 versus the 2008 benchmark, increasing from the 2008 average speed of 27.4 MPH to 30.3 MPH in this alternative.

Exhibit D-72 - 2035 Alternative 125 Simulated Performance – Freight Trains

Train Group	Run-Time Train Count	Average Speed with Dwell	True Delay DD:HH:MM	Ideal Run Time DD:HH:MM	Train Miles	Delay per 100 Train Miles
Expedited*	335	34.8	19:15:39	86:09:00	88534.3	31.96
Freight**	505	23.5	17:11:53	86:22:11	58780.8	42.86
Total	840	30.3	37:03:32	173:07:11	147315.1	36.31

*Includes Auto, Intermodal, Guaranteed Intermodal

**Includes Bulk, Empty Unit Coal, Grain, Local, Merchandise, Road Switcher, Unit, Yard, Coal

Exhibit D-73 shows freight trip times on the corridor in the Alternative 125 which are the same as the Base Alternative. Overall, measuring CSXT freight trip times between Selkirk Yard and Buffalo, the alternative shows an average trip time of 8:14 (versus 9:07 in the 2008 model), with a standard deviation of 1:37 (versus 2:40 in the 2008 model). The reduced variability (greater reliability) in trip time reflects the more predictable passenger train performance (which, in turn, results from the Albany, Albany-Schenectady, Syracuse and Rochester area improvements) as well as the future focus on better-performing intermodal trains.

Exhibit D-73 - 2035 Alternative 125 - Simulated Freight Trip Time Statistics and Reliability (Standard Deviation)

	Buffalo - Syracuse	Syracuse - Selkirk Yard	Syracuse - Buffalo	Selkirk Yard - Syracuse
Average	4:04:16	4:06:31	4:11:14	4:00:54
Min	2:52:59	2:51:50	2:52:14	2:51:58
Max	16:30:37	9:07:45	8:57:31	8:56:32
Std Dev	1:22:23	1:15:07	0:57:51	1:06:53

Appendix E Existing Transportation Conditions Supporting Documentation

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1. Overview

The following sections describe the transportation market study and existing railroad facilities and operations. The transportation market study evaluated the entire transportation network, including rail, highway, bus, and airport travel within the intercity travel market study area. These intercity transportation markets and modes were accounted for in forecasts of market demand and ridership presented in Appendix B. This section also provides an overview of other railroad routes and FRA track classifications/speeds, tracks and signals, rail yards and maintenance facilities, rail bridges and tunnels, grade crossings, and rolling stock.

2. Transportation Market Study

Cities along the Empire Corridor are serviced by four primary modes of transportation: auto, bus, air, and rail. Exhibit E-1 shows the relationship of rail stations with bus and airport locations on the Empire Corridor. Section 2 presents an overview of the alternative transportation modes along the Empire Corridor. It also summarizes the findings of the ridership and revenue market forecast study conducted for this Tier 1 EIS. The study consisted of a comprehensive market and ridership demand assessment to evaluate potential 2035 ridership as a function of travel time by city pair, level of service, reliability, and projected fare structure. Appendix B presents the *Ridership and Revenue Market Forecast for Empire Corridor High Speed Intercity Passenger Rail Tier 1 EIS* (Ridership and Revenue Forecast Study).

Totaling all of the travel corridor origin and destination pairs accessible by train or alternative travel mode, there is a total single passenger, one-way trip market of 219.3 million, as shown in Exhibit E-2. Six cities along the corridor, New York City, Albany, Utica, Syracuse, Rochester, and Buffalo, constitute the 15 major travel markets for Empire Corridor high-speed rail service.¹ As shown in Exhibit E-3, nearly 20 percent of this ridership, approximately 36.8 million, is accounted for among 15 origin and destination city pairs (or major market pairs) present on the Empire Corridor accessible by train or an alternative travel mode. This 36.8-million-person ridership is the total market in which rail competes and from which an improved Empire Corridor rail service could draw additional passengers.

2.1 Automobile Ridership

The primary highway corridor running along the Empire Corridor can be broken down into three major segments, all of which are part of the New York State Thruway system: Interstate 87 north from New York City to Albany, approximately 160 miles; Interstate 90 west from Albany to Buffalo, approximately 293 miles; and Interstate 190 from Buffalo to Niagara Falls, approximately 21 miles.

As shown in Exhibit E-2, more than 96 percent of total Empire Corridor area trips, or approximately 211 million single person trips, are made by auto. For travel between the six major cities (the 15 major market pairs) currently served by rail (or the Thruway exits most closely associated with Amtrak rail stations), the potential auto travel market, with which enhanced rail ridership services

¹ The 15 major travel markets are: New York City (NYC)-Albany; NYC-Utica, NYC-Syracuse, NYC-Rochester, NYC-Buffalo; Albany-Utica; Albany-Syracuse; Albany-Rochester; Albany-Buffalo; Utica-Syracuse; Utica-Rochester; Utica-Buffalo; Syracuse-Rochester; Syracuse-Buffalo, Rochester-Buffalo.

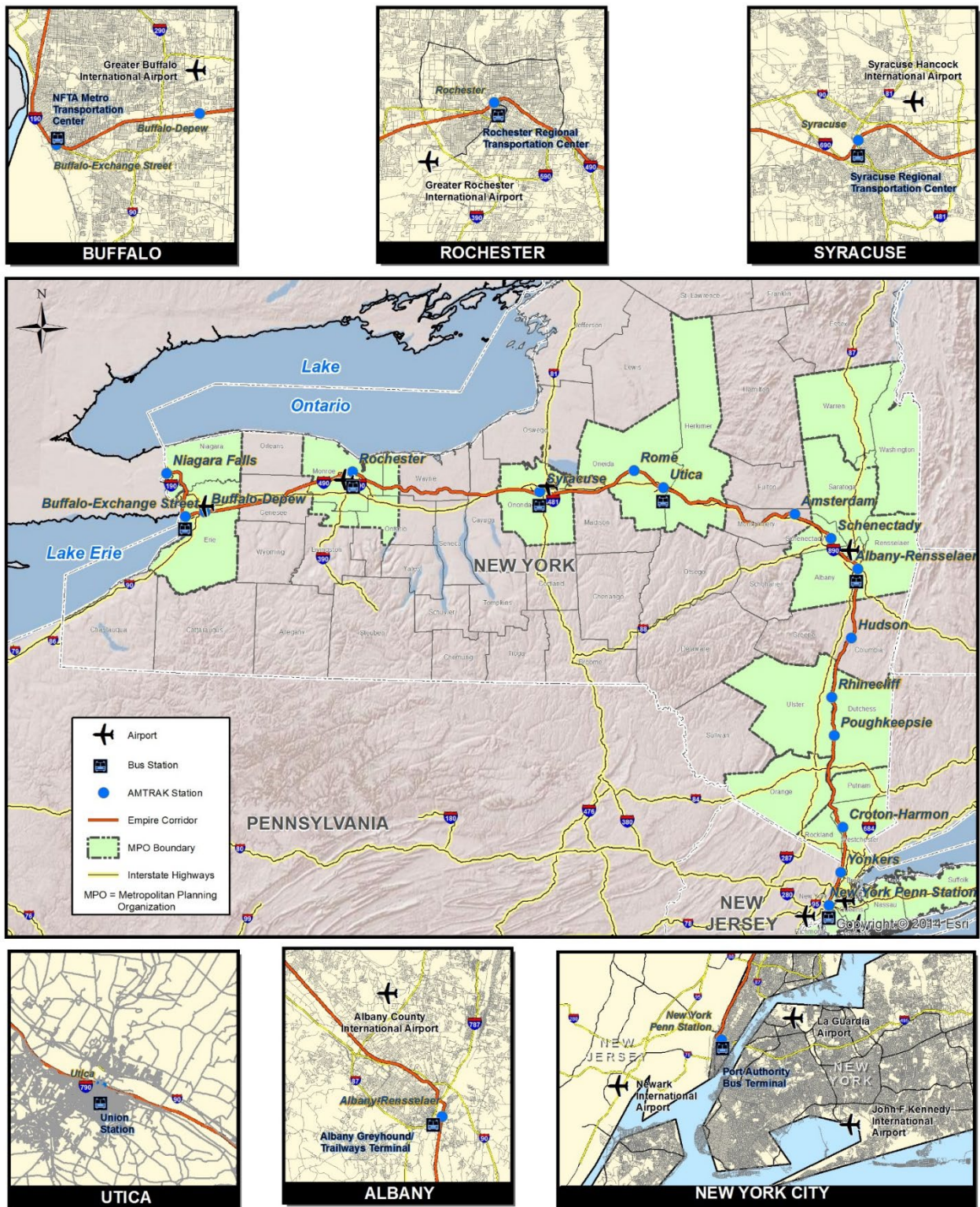


Exhibit E-1—Empire Corridor Station, Bus and Airport Locations

Exhibit E-2—Total Single Person Trips per Mode, Entire Corridor, 2009

Mode	Trips (single person)	Share (%)
Auto	210,977,488	96.2
Rail	1,298,706	0.6
Bus	4,593,637	2.1
Air	2,411,033	1.1
Total	219,280,865	100.0

Source: Adirondack Trailways, Amtrak, Bureau of Transportation Statistics, Greyhound, Megabus, Coach USA, NYSDOT, New York State Thruway Authority

Exhibit E-3—Total Single Person Trips per Mode by Major Markets, 2009

Mode	Single Trips	Share (%)
Auto	28,973,182	79
Rail	932,801	3
Bus	4,591,545	12
Air	2,337,800	6
Total	36,835,328	100

Source: Adirondack Trailways, Amtrak, Bureau of Transportation Statistics, Greyhound, Megabus, Coach USA, NYSDOT, New York State Thruway Authority

would compete, is approximately 29 million trips, or 79 percent of the total potential travel market between the major market cities in 2009.

Given the current modest levels of congestion on most parts of the corridor, auto-travel is the second fastest form of travel for most parts of the corridor, when compared to other modes. Other than air, which does not serve all markets on the corridor, auto has an advantage in travel time in the Empire Corridor versus current bus and rail service. Users are able to leave their point of origin and arrive at their destination without the transfer of modes required of public transit users who must select a secondary transport mode.

Key characteristics associated with automobile selection as the preferred mode of travel are travel time and cost, with travel time a product of congestion and distance between origin and destination and an assumed average speed. Automobile travel is relatively inelastic, in that automobile drivers do not typically switch to public transit without significant gains in travel time or reductions in cost. One major benefit of rail over automobile travel in this market is the convenience of not having to park in more congested locations, particularly in New York City.

2.2 Bus Service

Nonstop bus service exists between all the major cities along the corridor, and is provided by three major carriers: Trailways of New York, Greyhound, and Megabus. Adirondack Trailways, one of three brands of Trailways of New York, is the predominant carrier, followed by Greyhound.

Key characteristics associated with bus selection as the preferred mode of travel include frequency of service, fare price, and travel time.² Bus travel is the second most popular mode of travel. In 2009, there were nearly 4.6 million bus passenger trips in the Empire Corridor. Travel by bus comprises 2 percent of the travel market to all destinations along the entire corridor, and carries 12 percent of all trips between major city pairs located along the corridor (refer to Exhibit E-2 and Exhibit E-3). Bus travel is more dominant than rail in terms of ridership, due to the combination of slightly lower fares, better travel time and more regular and reliable service.

Regional express bus service has been a growing mode of travel throughout the Northeast. Current bus service providers in the Empire Corridor offer lower travel costs than those offered by previous bus services or competing Amtrak service. In recent years, bus carriers such as Greyhound and Megabus have focused on providing improved service tailored to business and student markets. This focus by bus carriers will challenge the ability of rail to capture this important “choice rider” category, which seeks not only value but quality as a substitute to automobile travel. Bus service is expected to continue to compete heavily with rail, and may capture a portion of rail’s share of the transit market in the corridor if no improvements to rail service are made.

2.3 Air Service

The Empire Corridor is served by the following ten commercial service airports: Niagara Falls International, Buffalo-Niagara International, Greater Rochester International, Syracuse-Hancock International, Albany International, Stewart International, Westchester County, LaGuardia, John F. Kennedy (JFK) International, and Newark Liberty International in Newark, NJ. Direct air service is provided to Syracuse, Rochester and Buffalo from the New York metropolitan area by Delta (LaGuardia and JFK International), JetBlue (JFK International), and United (Newark Liberty International). Only United provides direct service to Albany from New York.

Air travel is the third most frequented travel mode along the Empire Corridor, as well as the most expensive form of travel, compared to other modes. In 2009, air travel comprised approximately 1 percent of all trips along the entire corridor (refer to Exhibit E-2), for a total of approximately 2.4 million trips, and approximately 6 percent of all trips among the six major market areas, New York City, Albany, Utica, Syracuse, Rochester, Buffalo (refer to Exhibit E-3), for a total of approximately 2.3 million trips.

2.4 Comparative Major Market Travel Market

Automobile travel is the primary mode of travel along the Empire Corridor, and rail ridership has the lowest market share of trips (0.6 percent) compared to other available modes of transportation.

² While on-time performance is a key additional characteristic of bus service, these data were not available to access through the private carriers.

Of the total Empire Corridor major market rail trips in 2009, the most frequented origin and destination city was New York City, with approximately 423,000 trips (refer to Exhibit E-4). By far, rail's most frequently-traveled city pair in 2009 was New York City-Albany, with approximately 320,000 trips. Capturing only 11 percent of this market, however, rail was the third most popular mode of travel between New York and Albany, exceeding only air travel. Travel time and cost do not make air travel competitive between New York and Albany, due to the higher cost of air travel. Similarly, rail was not competitive with air travel between New York City and Buffalo, capturing less than 3 percent of the travel market of this city pair, while air captured approximately 50 percent of the city pair's travel market in 2009. With 42 percent of the New York City-Buffalo market, bus detracts from rail, when cost, frequency, and reliability, but not time, are the travel priorities.

Exhibit E-4—Empire Corridor Comparative Travel Market: New York City to Major Markets, 2009

Mode	Trip Destinations from NYC									
	Albany		Utica		Syracuse		Rochester		Buffalo	
	Total	%	Total	%	Total	%	Total	%	Total	%
Auto	2,019,534	71	134,243	41	3,584	1	25,380	5	45,129	5
Rail	320,155	11	19,858	6	29,787	5	23,427	4	29,881	3
Bus	405,460	14	176,212	53	266,885	47	217,272	38	427,700	42
Air	99,443	4	*	*	262,706	47	298,825	53	507,489	50
Total	2,844,592	100	330,313	100	562,962	100	564,904	100	1,010,199	100

Notes: 1. Percentages are approximate and have been rounded. 2. *service not available

Sources: Amtrak, Google, Orbitz, Expedia, Megabus, Greyhound, Adirondack Trailways.

2.5 Findings of the Ridership and Revenue Forecast Study

The Empire Corridor is overwhelmingly auto dominated and any small shift from the auto market (in terms of percentage) can bolster the growth of other travel modes. Analysis through 2035 indicates growth in all modes of travel and in the total travel market. An assessment of existing transit services in the Empire Corridor indicates that there is an opportunity for high-speed rail, with an increased service frequency and improved on-time performance (OTP), to capture some of the travel market currently dominated by other modes. The following is a summary of findings of existing transportation modes along the Empire Corridor, and the ability of high-speed rail to capture future ridership. The Ridership and Revenue Forecasting Study (Appendix B) provides detailed findings.

- Every transportation mode is at a disadvantage to auto for travel between Albany and New York City, due to transit linkages, wait time factors, and the need to follow a predetermined schedule. If schedules are convenient and service is reliable, rail can be seen as a competitive travel mode between Albany and New York City from both a cost and convenience standpoint. In addition, the ridership forecasts done for the Tier 1 FEIS demonstrate that people will ride the train even with the availability of other modes, such as auto, bus, and air. In part this is because train travel often brings a passenger closer to their final destination, often within walking distance, and avoids logistical issues such as parking constraints.

- Intercity bus service is expected to continue to compete heavily with rail service. Enhanced service and speed, along with a competitive price from rail, would likely reduce the dominance of bus service on the Empire Corridor.
- An improved high-speed rail, with favorable fares and more competitive travel times and schedule frequency, could be competitive with air travel. Air travel is by far the most expensive form of travel in the Empire Corridor. With trips of shorter distances along the corridor, air travel is inefficient with regard to cost and total travel time. Furthermore, out of the 15 city pairs located within the Empire Corridor, air service is available for only 4 city pairs, Albany, Syracuse, Rochester, and Buffalo.
- The bulk of rail ridership would come from longer trips on the corridor; namely from New York City to Syracuse, Rochester, and Buffalo. Currently, auto represents a small amount of the total trips between New York City and the major markets on Empire Corridor West. Rail could draw about half of its forecasted growth in ridership from the air market and approximately 25 percent from bus and auto trips.

In sum, the Ridership and Revenue Forecasting Study indicates that an improved rail service, in terms of improved travel time, frequency of service, and reliability, could capture a significant portion of the air and bus travel markets and some portion of the auto travel market in the Empire Corridor, particularly between New York City and cities in Empire Corridor West. Chapter 3 includes the ridership forecasts for the program alternatives.

3. Railroad Facilities and Operations

3.1 Other Existing Rail Routes

Section 3.1 presents an overview of the additional rail routes in the vicinity of and/or adjoining the Empire Corridor, to provide an understanding of the corridor's linkages to the statewide and regional rail system. Exhibit 2-4 in the Tier 1 Final EIS presents additional and adjoining rail corridors.

3.1.1 Additional Rail Routes

The CSXT River Line (also known historically as the West Shore Railroad route) is a single-track freight line that extends along the west side of the Hudson River from New Jersey to Selkirk Yard, south of Albany. The River Line is not a viable alternative to the Empire Corridor, because it is operating at capacity with significant freight volumes, does not provide access to Albany-Rensselaer Station and does not offer a direct connection to Manhattan.

The Southern Tier Route that connects Hoboken, New Jersey with Binghamton, Elmira and Buffalo formerly provided a more direct passenger train route (404 miles) between the New York metropolitan area and Buffalo than the Empire Corridor, but did not serve population centers in Albany, Syracuse, and Rochester. Relatively frequent passenger train service (three round trips per day) existed until the 1960s, but did not continue after the beginning of Amtrak in 1971. New York State has funded investments in the Southern Tier freight service in recent decades and the track remains active, although owned by several different railroads. The Southern Tier Route is not a viable alternative to the Empire Corridor, because it bypasses most of the state population centers.

3.1.2 Linkages to Adjoining Rail Corridors

Amtrak services along rail corridors adjoining and operating on portions of the Empire Corridor include the following:

- Northeast Corridor (NEC) Acela and Northeast Regional Service, connecting at Penn Station, NYC;
- Adirondack and Ethan Allen Express Services, operating north from Schenectady Station on the Canadian Pacific Railway and extending to Montreal, Canada and Vermont, respectively;
- Lake Shore Limited, connecting Albany-Rensselaer Station and Boston on the east via the former Boston and Albany line;
- Lake Shore Limited West, extending west of Buffalo to Cleveland and Chicago on the CSXT Chicago Line; and
- Maple Leaf Service, operated by VIA Rail Canada (a Canadian government corporation), which continues to Toronto via the Canadian National Railroad Lakeshore Line.

The Amtrak **Northeast Corridor (NEC) Acela Service and Northeast Regional Services** operate from New York Penn Station northeast to Boston and south to Washington, D.C. along the most highly-developed and heavily-traveled passenger rail corridor in the country. The first high-speed rail line in the country, and one of the highest volume rail corridors in the world, the Northeast Corridor serves the densest populations in the Northeast and the nation. It crosses nine states and passes through Baltimore, Wilmington, Philadelphia, Trenton, Newark, New Haven, and Providence. The two high-speed rail corridors (Empire and Northeast Corridors) intersect at Penn Station, the busiest passenger station in the nation, with more than ten million intercity riders in fiscal year (FY) 2016.

In addition to Amtrak passenger rail service between Boston and Washington, the Northeast Corridor accommodates commuter rail and freight rail uses, including Metro-North and the Long Island Railroad in New York State. As the first rail corridor to implement high-speed rail improvements nationwide and the last to be officially designated as a national high-speed rail corridor (March 2011), more funding and improvements are proposed for the Northeast Corridor as part of a comprehensive program, NEC FUTURE, to enhance high-speed rail by FRA, Amtrak, and the states traversed.

The intent of the NEC FUTURE program is to help develop a long-term vision and investment program for the NEC. FRA released the NEC FUTURE Tier 1 Final EIS in December 2016 and the subsequent Record of Decision (ROD) in July 2017. The ROD documents the FRA's corridor-wide commitment to the NEC to bring it to a state of good repair and provide additional capacity and service enhancements to address passenger rail needs for the future. The selected alternative for NEC future will improve NEC rail service by bringing it to a state of good repair and modernizing with improved infrastructure elements that focus on the Washington, D.C. to New Haven, CT and Providence, RI to Boston, MA sections.

The Canadian Pacific Railway (formerly Delaware and Hudson), which extends north of Schenectady Station to Rouses Point, New York and Montreal (one daily roundtrip), accommodates Amtrak **Adirondack Service** that originates from New York City along the Empire Corridor, as well as freight service. Amtrak **Ethan Allen Express Service** also operates on Empire Corridor South, diverging at Whitehall, and continuing northeast to Rutland, Vermont (one daily roundtrip). As part of the I-87 Multi-Modal Corridor Study (2004) that analyzed high-speed rail service between New York City and

Montreal, Canada, capital improvements to the existing freight and passenger line were identified.³ Outside the portion of the New York City to Montreal route that is shared with the Empire Corridor, this route is not designated by FRA as a high-speed rail corridor. The State of Vermont received federal funding for plans to extend passenger service north to Burlington. New York State has funded a number of capital improvements on the line, with Canadian Pacific Railway funding an equal or additional amount.

Amtrak's **Lake Shore Limited Service** operates from Boston to Chicago, along the former Boston and Albany Line, to join with the Empire Corridor in Albany (one daily connecting service). It also continues west from Buffalo to Chicago (one daily connecting service) on the CSXT Chicago Line. The Boston to Albany route is part of the federally designated Northern New England high-speed rail corridor. The high-speed rail corridor designation includes a branch south from Springfield, Massachusetts through Hartford to New Haven, Connecticut, and two other routes from Boston to Portland, Maine and to Montreal via White River Junction, Vermont.

A proposed Buffalo to Cleveland route and the connecting proposed high-speed connection to Chicago follows the western path of the Amtrak **Lake Shore Limited West Service**. This section is part of the Ohio 3C rail corridor, for which FRA awarded grant funding under the American Recovery and Reinvestment Act (ARRA). This grant was later withdrawn, when the State of Ohio elected not to advance or implement the high-speed rail improvements. On the west, the proposed Ohio 3C high-speed rail corridor is part of the Chicago Hub Network, one of the designated high-speed rail corridors nationwide. The 3C corridor includes service from a hub in Cleveland southwest to Columbus and Cincinnati. The Ohio Rail Development Commission and the Ohio Department of Transportation undertook a feasibility study of high-speed rail routes with Cleveland as a hub. Although not part of the national high-speed rail designated corridor, potential high-speed rail routes identified from Cleveland would connect east to Buffalo.

The **Maple Leaf Service**, an extension of the Empire Service from New York City operated by Amtrak and VIA Rail Canada, continues from Niagara Falls northeast to Toronto (one daily roundtrip). The potential for high-speed rail service to Toronto and Quebec in Canada from Buffalo, as an extension of the Buffalo-Niagara Falls route, has been discussed by various agencies, including the Greater Buffalo Niagara Regional Transportation Council and the Canadian government.

3.2 Reliability and On-time Performance

Intercity passenger performance can be measured by the percentage of trains (and passengers) that arrive at their destination within the “lateness” period (e.g., within 10 to 15 minutes of scheduled arrival). The 2019 on-time performance metrics, as currently measured and defined, are addressed in Section 2.5.1 of the Tier 1 Final EIS, which presents OTPs for Empire Corridor routes factoring in all customers and stations. The NYSDOT program objective for the Empire Corridor service is to improve system-wide OTP to at least 90 percent.

The following section presents a route-specific discussion of endpoint OTPs based on 2017 metrics for end-point OTPs.

As of September 2017, Amtrak reported that endpoint OTP for Empire Service between New York, Albany, Syracuse, Rochester, Buffalo, and Niagara Falls was 80 percent for the month, with an OTP of

³ Parsons-Clough Harbour. *I-87 Multimodal Corridor Study: Existing Corridor Conditions and Opportunities*. Prepared for NYSDOT, May 2004.

84 percent for the preceding 12 months. Review of Amtrak OTP indicates that, in 2017, endpoint OTPs were generally lower for trains operating to and from Niagara Falls, compared to trains that service Albany-Rensselaer.

In October 2017, endpoint OTP for four of the six trains operating to and from Niagara Falls and New York City ranged from 47 percent to 65 percent (Exhibit E-5). The endpoint OTP for these four trains for the prior 12 months ranged from 64 percent to 75 percent. The highest OTP was for the train leaving in off-peak hours at 3:27 a.m., with OTPs of 85 percent and 89 percent. The other train leaving in off-peak hours at 6:22 a.m. reported OTPs, ranging from 77 percent to 81 percent.

Exhibit E-5—2017 OTP for Empire Service between Niagara Falls and NYC

Train	Destination	Schedule		On-time Performance	
				October 2017	Last 12 Months
280	Niagara Falls to NYC	Monday-Saturday	3:27 a.m.-2:45 p.m.	85%	89%
281	NYC to Niagara Falls	Daily	10:20 a.m.-7:36 p.m.	47%	71%
282	Niagara Falls to NYC	Monday to Wednesday	5:37 a.m.-2:50 p.m.	59%	76%
283	NYC to Niagara Falls	Daily	1:20-10:36 p.m.	65%	75%
284	Niagara Falls to NYC	Daily	6:22 a.m.-3:45 p.m.	77%	81%
288	Niagara Falls to NYC	Sunday	2:34-11:45 p.m.	60%	64%

Source: Amtrak On-Time Performance for Empire Service, March 7, 2018.

In March 2018, review of the monthly OTP and the OTP for the preceding 12 months for the Empire Service for trains that operate only between Albany-Rensselaer Station and New York City indicated that 14 of the 18 trains experienced OTPs below 90 percent (Exhibit E-6).

In October 2017, the trains operating during the peak hours or midday had the lowest OTPs. Trains 232 and 233 that operate in the morning or midday had OTPs of 59 percent and 39 percent, respectively, and Trains 237 and 242 that operate in the afternoon peak had OTPs of 41 percent and 64 percent. The remaining trains had OTPs that varied from 68 percent to 89 percent. The four best-performing trains operated at time slots either very early (5 a.m.), late (after 9 p.m.), or on weekends.

This OTP information indicates that trains that operate during peak or midday periods, when adherence to train schedules is most important, are less likely to meet scheduled travel times.

In 2017, the primary causes for delays in Empire Service was train interference (nearly 50 percent), with nearly 45 percent reported to be due to conflicts with Metro-North traffic and 40 percent attributed to CSXT traffic, as shown in Exhibit E-7. Other leading causes for delays included track and signals and other equipment and operational issues.

Other regional and international Amtrak services that use Empire Corridor trackage also exhibited poor OTPs, all below 90 percent, as shown in Exhibit E-8. These services, and the trains operating on these routes, operated in 2017 at OTPs ranging from a low of 30 percent to a high of 85 percent. The endpoint OTPs reflected service delays extending beyond Empire Corridor.

The Ethan Allen Express, serving Rutland, Vermont along the Empire Corridor between New York City and Fort-Edward-Glen Falls (north of Schenectady) reported an OTP for the overall service of 85 percent in September 2017, and 80 percent for the preceding 12 months. Individual trains, however, reported OTP as low as 50 percent to 75 percent, as shown in Exhibit E-8 during peak travel times.

Exhibit E-6—2017 OTP for Empire Service between Albany-Rensselaer and NYC

Train	Destination	Schedule		On-time Performance	
				October 2017	Last 12 Months
230	Albany-Rensselaer to NYC	Monday-Friday	5:05-7:30 a.m.	96%	94%
232	Albany-Rensselaer to NYC	Monday-Friday	5:55-8:15 a.m.	59%	76%
233	NYC to Albany-Rensselaer	Daily	11:20 a.m.-1:50 p.m.	39%	70%
234	Albany-Rensselaer to NYC	Monday-Friday	6:55 -9:20 a.m.	86%	87%
235	NYC to Albany-Rensselaer	Monday-Friday	2:20-4:40 p.m.	68%	89%
236	Albany-Rensselaer to NYC	Monday-Friday	8:20 -10:50 a.m.	81%	83%
237	NYC to Albany-Rensselaer	Monday-Friday	4:40-7:00 p.m.	41%	77%
238	Albany-Rensselaer to NYC	Daily	12:05-2:45 p.m.	84%	89%
239	NYC to Albany-Rensselaer	Monday-Thursday	5:47-8:20 p.m.	71%	68%
241	NYC to Albany-Rensselaer	Daily	7:15-9:45 p.m.	84%	89%
242	Albany-Rensselaer to NYC	Monday-Friday	3:10-5:45 p.m.	64%	85%
243	NYC to Albany-Rensselaer	Monday-Friday	8:55-11:25 p.m.	100%	93%
244	Albany-Rensselaer to NYC	Daily	4:05-6:45 p.m.	84%	84%
253	NYC to Albany-Rensselaer	Saturday-Sunday	5:15-7:45 p.m.	90%	76%
254	Albany-Rensselaer to NYC	Sunday	10:05 a.m.-12:45 p.m.	80%	94%
255	NYC to Albany-Rensselaer	Friday	3:15-5:45 p.m.	50%	91%
256	Albany-Rensselaer to NYC	Sunday	2:10-4:45 p.m.	100%	92%
261	NYC to Albany-Rensselaer	Saturday-Sunday	11:35 p.m.-2:05 a.m.	90%	94%

Exhibit E-7—Primary Causes of Delay for Empire Service On-Time Performance In 2017

Train Interference	48.5%	Track and Signals	27.8%	Operational	11%
Metro-North Railroad	45.6%	Metro-North Railroad	45.8%	CSXT Corporation	43.4%
CSXT Corporation	40.0%	CSXT Corporation	32.7%	Amtrak	39.5%
Amtrak	14.5%	Amtrak	21.5%	Metro-North Railroad	17.1%

The Lake Shore Limited that continues past Buffalo-Depew Station to Chicago had an OTP for the overall service of 52 percent for September 2017, with 48 percent for the preceding 12 months. This line operates either between Boston and Albany or along the Empire Corridor between New York City and Albany. Trains 48 and 49 reported OTPs ranging from 83 percent to 30 percent for September 2017 to 65 percent to 32 percent for the preceding 12 months, respectively.

The Adirondack Service that continues north of Schenectady to Montreal had an OTP for the overall service of 55 percent for September 2017, with 61 percent for the past 12 months. Trains 68 and 69 reported OTPs ranging from 71 percent to 65 percent for October 2017 to 67 percent to 57 percent for the preceding 12 months, respectively.

Exhibit E-8—2017 OTP for Ethan Allen, Lake Shore Limited, Adirondack, and Maple Leaf Services

Train	Destination	Schedule		On-time Performance	
				9-10/2017	Last 12 Months
291	Ethan Allen Express: NYC to Rutland, VT via Fort Edward-Glen Falls	Saturday-Thursday	Leaving NYC 3:14 p.m. for Fort Edward-Glen Falls 7:10 pm	85%	83%
292		Saturday	Leaving Fort Edward-Glen Falls for NYC (12:25 p.m.-4:45)	50%	77%
293		Friday	Leaving NYC for Fort Edward-Glen Falls (5:47-9:43 p.m.)	75%	80%
48	Lake Shore Limited: Chicago to NYC via Buffalo-Depew to Albany	Daily	Leaving Buffalo-Depew for NYC (8:51 a.m.-6:23 p.m.)	83%	65%
49		Daily	Leaving NYC for Buffalo-Depew (3:40-11:59 p.m.)	30%	32%
68	Adirondack to Montreal via Fort Edward-Glen Falls	Daily	Leaving Fort Edward-Glen Falls for NYC (4:16 p.m.-8:50 p.m.)	71%	67%
69		Daily	Leaving NYC for Fort Edward-Glen Falls (8:15 a.m.-12:23 p.m.)	65%	57%
63	Maple Leaf to Toronto via Niagara Falls	Daily	Leaving NYC 7:15 for Niagara Falls (4:51 p.m.) and Toronto, Ontario (7:41 p.m.)	81%	73%
64		Daily	Leaving Toronto (8:20 a.m.) for Niagara Falls (12:34 p.m.) and NYC (8:50 p.m.)	77%	76%

Source: Amtrak On-Time Performance for Empire Service reported for September 2017-October 2017.

The Maple Leaf Service that continues north from the Niagara Falls Station to Toronto had an OTP of 75 percent in September 2017 and 75 percent for the preceding 12 months. Trains 63 and 64 reported OTPs ranging from 81 percent to 77 percent for October 2017, with OTPs of 73 to 76 percent for the preceding 12 months.

In 2009-2010, OTP was just 77.9 percent for trains operating between Penn Station and Albany-Rensselaer and 61.7 percent for trains operating between Penn Station and Niagara Falls. The 2008 OTP for trains operating between Albany-Rensselaer and Niagara Falls was 47.6 percent.⁴ These statistics are based on a lateness threshold of 10 minutes.

A train that is 10-minutes late is reported the same as a train that is three hours late, yet the latter has a much more severe impact because it is likely to result in passengers selecting other modes for future travel. Trains are allowed a certain tolerance at the end-point based on the number of miles traveled. For example, trains traveling 250 miles or less are allowed a 10-minute tolerance, while trains traveling over 550 miles are allowed a 30-minute tolerance, which is the maximum allowed. A long-distance train traveling over 550 miles would be considered “on-time” if it arrived at its final destination within 30 minutes of its scheduled arrival time. On-time performance, as presented in

⁴ LTK Engineering Services. Rail Network Operations Simulation Results. Prepared for NYSDOT. June 2012.

this section, was calculated and measured at the end-point of a train route. Endpoint tolerances would be 15 minutes for 251 to 350 miles, 20 minutes for 351 to 450 miles, 25 minutes for 451 to 550 miles.

3.3 FRA Track Classification and Speed

The track safety standards of the FRA establish nine specific classes of track (Class 1 to Class 9), plus a category known as Excepted Track (see Exhibit E-9). The difference between each Class of Track is based on progressively more exacting standards for track structure, geometry, and inspection frequency. Railroads determine the Class of Track to which each segment of track belongs based on business and operational considerations. Once the designation is made, FRA holds railroads accountable for maintaining the track to the standards for that particular class.

If through regular maintenance and inspection efforts a railroad discovers that a section of its track fails to meet the specified federal standard, the railroad is required to make appropriate repairs to maintain the Class of Track designation, or downgrade the track segment to a lower Class of Track for which the federal standard can be met. Each Class of Track has a corresponding MAS for both freight and passenger trains. The higher the Class of Track, the greater the allowable track speed; as the Class of Track increases, so do the required track safety standards (refer to Exhibit E-9).

Exhibit E-9—Maximum Authorized Speed by Class of Track

Class of Track	Maximum Authorized Speed (MAS) for Freight Trains (mph)	Maximum Authorized Speed (MAS) for Passenger Trains (mph) ¹
Excepted Track ²	10	N/A
Class 1	10	15
Class 2	25	30
Class 3	40	60
Class 4	60	80
Class 5	60	90
Class 6	60	110
Class 7	60	125
Class 8	60	160
Class 9	60	220
¹ / Effective July 11, 2013, Vehicle/Track Interaction Safety Standards Final Rule (March 13, 2013, 78 FR 16052) ² / In addition to the nine numbered classes, FRA track standards also provide for " excepted " track , which carries a 10 mph speed limit for freight but cannot be used by revenue passenger trains. FRA permits excepted track under very narrowly defined conditions. FRA regulations permit higher freight train speeds for this class of track. However, CSXT limits present and future freight train speeds on the corridor to 60 mph.		

Source: FRA Federal Track Safety Standards Fact Sheet

As noted in Exhibit E-10, Amtrak maintains most of the Empire Connection to FRA Class 3. Metro-North maintains the segment to the north of the Hudson Line to FRA Class 4, except for a short section near the station and shop facilities at Croton-Harmon, which are maintained to FRA Class 3.

The segment of the Hudson Line extending north of Croton-Harmon Station varies from FRA Class 3 to 6. The CSXT Hudson Subdivision south of Albany-Rensselaer Station varies from FRA Class 3 to 6.

The CSXT Hudson Subdivision west of Albany-Rensselaer Station varies from FRA Class 1 to 6.

CSXT maintains most of the main line track on the Selkirk and Mohawk Subdivisions to Class 4, except through some of the major cities where it is Class 3. CSXT maintains most of the main line track on the CSXT Rochester and Buffalo Terminal Subdivisions to Class 4, except passing through some of the major cities where it is Class 3. CSXT maintains the Niagara Subdivision main line tracks to FRA Class 3 condition. The controlled siding from CP 25 to Niagara Falls Station is FRA Class 2. Actual operating speeds are restricted in a number of locations due to curvatures, track conditions, and other restrictions. Also refer to Section 2.1.2 of the Tier 1 Final EIS for a description of existing train speeds in the Empire Corridor.

Exhibit E-10 displays the principal Empire Corridor operating segments, the length of the segment, the MAS range for passenger trains, and the average operating speed for passenger trains. The average operating speed reflects the shortest scheduled time for that segment, based on Amtrak timetables.⁵ Some trains have longer scheduled times than others for a given segment, based on anticipated operating congestion, construction outages, and historical performance considerations.

Exhibit E-10—Empire Corridor Maximum Authorized Speed (MAS) by Segment and Speed Range

From	To	Operated By	Miles	Miles at Maximum Authorized Speed (MAS)					Average Operating Speed mph
				<60	60-70	75-85	90-95	100-110	
				(miles)	(miles)	(miles)	(miles)	(miles)	
Penn Station	Spuyten Duyvil (CP 12)	Amtrak	10.8	2.9	7.9	--	--	--	41
Spuyten Duyvil (CP 12)	Croton-Harmon (CP 34)	Metro-North	21.7	4.6	6.5	10.6	--	--	52
Croton-Harmon (CP 34)	Poughkeepsie (CP 75)	Metro-North	42.4	6.1	9.4	11.5	15.4	--	65
Poughkeepsie (CP 75)	Albany-Rensselaer	Amtrak	66.3	0.3	--	8.3	41	16.7	66
Albany-Rensselaer	Schenectady	Amtrak	17.7	5.1	--	1.7	3.6	7.3	48
Schenectady	Hoffmans	Amtrak	9.7	0.5	1	--	1.3	6.9	53
Hoffmans	Utica	CSXT	68	2.4	39.8	25.8	--	--	63
Utica	Syracuse	CSXT	53.9	1.8	6	46.1	--	--	49
Syracuse	Rochester	CSXT	79.6	14.3	18.9	46.4	--	--	63
Rochester	Buffalo Depew	CSXT	60.7	1.2	--	59.5	--	--	69
Buffalo Depew	Buffalo Exchange St	CSXT	7.9	2.4	1.8	3.7	--	--	34
Buffalo Exchange St	Niagara Falls	CSXT	24.6	7.1	17.5	--	--	--	39
Total Miles			463.3	48.7	108.8	213.6	61.3	30.9	
Percentage of Total				11%	23%	46%	13%	7%	

⁵ The average operating speed is based on the best scheduled times in April 18, 2011 Amtrak Timetable in either direction, and does not include Albany-Rensselaer dwell

The fastest scheduled segment of the corridor is from Rochester to Buffalo-Depew, where trains are scheduled to cover approximately 61 miles in just under an hour, yielding a scheduled operating speed average of 69 mph. The slowest scheduled segment is between Buffalo-Depew and Buffalo-Exchange Street, where the scheduled operating speed average is 34 mph, due to the positioning of tracks relative to station platforms and tracks leading to Frontier Yard and Niagara Branch.

Exhibit 2-5 in Chapter 2 of the Tier 1 Final EIS and Exhibit E-10 summarize the Empire Corridor MAS for passenger trains by segment and speed range. It shows that a relatively small percentage of the overall route (6.7 percent) is capable of supporting 100 or 110 mph passenger train speeds. These locations are limited to portions of Empire Corridor South and Empire Corridor West between Poughkeepsie and Hoffmans. About 20 percent of the corridor is capable of supporting passenger train speeds of 90 mph or greater, and 66 percent of the corridor is capable of supporting passenger train speeds of 75 mph or greater. Only 11 percent of the Empire Corridor has a MAS of less than 60 mph for passenger trains.

3.4 Infrastructure

This section describes the Empire Corridor infrastructure, including track and signals, rail yards and maintenance facilities, rail bridges and tunnels, grade crossings, and rolling stock. Rolling stock consists of the vehicles that move on the railroad, including locomotives and coaches.

3.4.1 Tracks and Signals

This section describes the existing configuration of the tracks and the type of signal systems along the Empire Corridor. The type of signal system has implications for maximum speed. Section 3.3 provides a description of Maximum Authorized Speeds (MAS), and Exhibit E-10 and Exhibit 2-5 in Chapter 2 of the Tier 1 Final EIS present MAS and average operating speeds throughout the corridor.

Empire Corridor South

Penn Station, NYC and the Empire Connection: At Penn Station, Tracks 5–9 connect to Amtrak’s Sunnyside Yard and the Penn Station support facility to the east, and to the Empire Connection to the west. The first segment of the Empire Connection from Penn Station and curving under the West Side Yard is single track to a point just north of 39th Street, about 0.75 mile from Penn Station. At that location, Empire Interlocking defines the track junction where double track begins to the north. Continuing along the west side of Manhattan, most of the alignment is located within a tunnel, with only a few short openings up to just north of 123rd Street where the tunnel ends, 5 miles from Penn Station (refer to Tunnel description in Section 3.4.3). For a few miles in the Bronx there are only two or three tracks on the Metro-North Hudson Line, with a notable bottleneck of double track at the Marble Hill Cutoff between CP 10 and CP11 on the line from Grand Central Terminal.

Double track ends 9.6 miles from Penn Station at Inwood Interlocking, a short distance south of the swing span rail bridge over the Harlem Ship Canal at Spuyten Duyvil Bridge, 10 miles from Penn Station. The single track continues north, as it enters the Metro-North Hudson Line right-of-way at 10.2 miles from Penn Station. The single-track Empire Connection parallels the three-track Metro-North Hudson Line a short distance north to the interlocking designated as CP12, approximately 10.8 miles from Penn Station. In this 10.8-mile segment, there are 8.9 miles of double track and 1.9 miles of single track.

Trackage at Penn Station is within interlocking limits, with all trains limited to a maximum speed of 15 mph. The track geometry is the limiting factor for speed on this segment of railroad. All other tracks up to CP 12 on the Hudson Line are equipped with bidirectional wayside signaling with cab signaling.

Hudson Line South: Hudson Line South extends from CP12 to a point about 22 miles to the north at Croton-Harmon Station. At the southern end of this segment, Metro-North has three tracks. Amtrak's Empire Connection from Penn Station, single track at this location, parallels these three tracks for about one half mile north, merging with the Metro-North tracks at CP12. CP12 is a complex interlocking consisting of both left and right hand crossovers, allowing trains to move from one track to the other. It is the junction of the Amtrak Empire Connection and the beginning of four tracks from CP12 north to the end of this segment at Croton-Harmon Station.

South of the Croton-Harmon Station, the Hudson Line is electrified using a third rail system and serves suburban stations located more closely together. Most of the electrified zone has four tracks (though one of the tracks is not electrified in much of this segment), supporting bidirectional express and local operation. In general, the two outside tracks accommodate local service to the stations along the route, while the center tracks serve as express tracks that do not have station platforms except at the major stations. Three of the four main line tracks have under running contact rails (3rd rail). In some locations, there is a fifth track used only for freight service to facilitate access to on-line freight consignees and shippers. These tracks, generally parallel to the main line tracks, allow local freight trains to shift freight cars in and out of customer's siding clear of the main tracks. The Croton-Harmon Station divides the two segments of the Metro-North Hudson Line, with electrification and high density commuter train operation south of Croton-Harmon to Grand Central Terminal (GCT).

Hudson Line North: North of Croton-Harmon to Poughkeepsie, the line is mostly double-tracked, with a few three-track areas. Most diesel trains north of Croton-Harmon operate through to GCT, operating express over the electrified portion of the line. There is a mostly freight-only third track between Croton-Harmon Station and Peekskill. There is also a 2.5-mile section of triple track between MP 58.5 (CP 58), just south of Beacon to MP 61.2 (CP 61), that is used as a turnback location for some northbound Metro-North trains. At Poughkeepsie Station, there are five tracks, but only three tracks have direct platform access and are normally used in revenue service.

The signal system in both the Hudson Line South and the Hudson Line North is a centralized traffic control system with wayside signals located only at interlockings (track junctions) and cab signaling located throughout. The maximum authorized speed on Metro-North Railroad is 80 mph.

Amtrak's Hudson Line (formerly CSXT Hudson Subdivision South of Albany): This entire segment from Poughkeepsie to Albany-Rensselaer is double track for passenger operations. In addition to the endpoint passenger stations, there are intermediate stations at Rhinecliff and Hudson. There are short segments of additional track used for freight service. The signal system is a centralized traffic control system with wayside and cab signaling. Speeds over 79 mph are possible on most of this segment.

Empire Corridor West

Amtrak's Hudson Line (formerly CSXT Hudson Subdivision West of Albany-Rensselaer to Hoffmans): The segment is primarily single track, with the exception of two locations: approximately 1.7 miles of double track from Albany-Rensselaer Station through the Livingston

Avenue Bridge, to a point on the west side of the Hudson River (with only the single main track normally used by Amtrak trains); and approximately 3.3 miles of double track through Schenectady (CP156 to CP159). NYSDOT has restored a second main track from Albany-Rensselaer to Schenectady (incorporating the CP156 to CP159 double track). NYSDOT equipped this segment with bi-direction and cab signaling.

CSXT Selkirk and Mohawk Subdivisions, Hoffmans to Syracuse: This segment is double track and signaled for movement in both directions. There are additional tracks at several yards and a number of parallel sidings (controlled sidings), typically two to three miles long connected to the main line at both ends within interlockings. Controlled sidings are located where CSXT has small freight yards and/or access to on-line shippers and consignees that can be serviced clear of the main line. Controlled sidings form three-track mainlines at selected locations. Limited to 30 mph, they are used to move trains around for maintenance on the main line tracks or to “pocket” a freight train to temporarily relieve congestion on the main tracks. Controlled sidings in this segment are located as follows:

• Amsterdam	CP 173 to CP 175	10,900 feet long – north side
• Fonda	CP 184 to CP 188	16,200 feet long – north side
• St. Johnsville	CP 203 to CP 207	18,200 feet long – north side
• Little Falls	CP 215 to CP 218	18,200 feet long – north side
• Oneida Yard	CP 263 to CP 266	10,700 feet long – south side
• Belle Isle Yard	CP 293 to CP 296	15,300 feet long – north side

West of Hoffmans, the bidirectional signaling with centralized traffic control continues, but there is no cab signaling on this segment. The heavy volume of CSXT freight trains accessing the Empire Corridor from Selkirk Yard, therefore, does not need to be equipped with cab signaling. FRA regulations limit maximum speed without cab signaling to 79 mph.

CSXT Rochester and Buffalo Terminal Subdivisions: West of Syracuse, the Empire Corridor continues as double track, signaled for movement in both directions. There are additional tracks at several yards and a number of parallel controlled sidings in this segment, where there is local freight switching of on-line customers. Controlled sidings in this segment are located as follows:

• Savannah	CP 320 to CP 323	13,400 feet long – north side
• Lyons Yard	CP 334 to CP 335	5,960 feet long – north side
• Rochester	CP 367 to CP 373	27,984 feet long – north side
• Chili	CP 380 to CP 382	10,100 feet long – north side
• Batavia	CP 402 to CP 406	10,100 feet long – north side

The signaling in this segment is identical to that of the Selkirk and Mohawk Subdivisions.

Niagara Branch

CSXT Niagara Subdivision: This segment is a mix of double and single track, with two single-track sections on the south (9.5 miles) and north (5 miles). Single track starts at the beginning of this segment in downtown Buffalo, continuing through Exchange Street to CP 8, for a distance of 7.5 miles. Double track extends (with each track signaled only in one direction) from CP 8 to CP 17, for a distance of 9.7 miles. The line is then single track from CP 17 to CP 22, for a distance of 5.5 miles. There is a section of double track from CP 22 to CP 25 (2.3 miles) for passenger trains that access Niagara Falls Station. From CP 25 north, the station is on a single track controlled siding for a distance

of 1.6 miles. In total, the portion of the Niagara Subdivision used by passenger trains has 14.6 miles of single track and 12.0 miles of double track.

The single track main line segments are bidirectional signaling with centralized traffic control but without cab signals. The 9.7-mile double-track section from CP 8 to CP 17 has Rule 261 Automatic Block Signaling, which means there are signals only in the normal right hand running direction. If a train has to be routed on a track not signaled for its direction of travel, the train requires special clearance from the CSXT dispatcher and must operate at a reduced speed. The short section of double track from CP 22 to CP 25 is governed by Rule 261, signaled for movement in both directions. Speeds up to 79 mph are allowed by FRA in non-cab signaled locations such as this segment. The current maximum speed of 60 mph is dictated by FRA Class 3 Track (60 mph for passenger), signal block spacing, automatic grade crossing warning system start points, and curve restrictions where speeds are less than 60 mph.

3.4.2 Rail Yards and Maintenance Facilities

Exhibit 2-3, Exhibit 2-6, and Exhibit 2-7 in the Tier 1 Final EIS present the approximate locations of major Amtrak, Metro-North, and CSXT rail yards and maintenance facilities located on the Empire Corridor and Niagara Branch.

Amtrak Facilities

Amtrak operates two major maintenance facilities in New York State:

- **Sunnyside Yard** in New York City and Albany-Rensselaer. Sunnyside Yard, located in Queens, is the Penn Station area support facility where Amtrak stores and maintains the rolling stock used in the Empire Corridor services. In addition to servicing Amtrak's conventional trains, Sunnyside also serves as a facility for Acela Express train sets.
- The **Albany-Rensselaer facility**, located just north of Albany-Rensselaer Station, serves as the primary maintenance facility for the Empire Corridor. Amtrak maintains a major car and locomotive shop, train storage yard, and maintenance-of-way depot.
- A smaller facility located in **Niagara Falls** provides turnaround services to New York-Buffalo-Niagara Falls Empire Service trains.

Exhibit E-11 provides a summary of the rolling stock storage and maintenance facilities for Amtrak.

Exhibit E-11—Summary of Amtrak Rolling Stock Storage and Maintenance Facilities

Name/Location	Primary Function for Empire Corridor	Daily Clean & Service	FRA Inspections	Heavy Repairs
Amtrak Shops Albany-Rensselaer	Maintenance Facility for Empire Corridor	●	●	●
Sunnyside Yard Queens, NYC	Overnight Storage & Servicing, 2 Trains	●		
Station Tracks Niagara Falls	Overnight Storage & Servicing, 2 Trains	●		

Metro-North Facilities

Metro-North maintains large shop facilities at **Croton-Harmon Station**, the end of electrified train territory. The facility maintains all types of Metro-North equipment, including electric multiple unit rail cars, as well as non-powered coaches, straight diesel electric, and dual mode (electric/diesel electric) locomotives. There are also storage tracks for trains stored overnight and weekends and maintenance of way equipment.

Just north of **Poughkeepsie Station**, there are two to three tracks located on each side of the main line. These had been used exclusively for freight, but are now used to store and stage Metro-North train sets.

CSXT Facilities

CSXT maintains a 4,000-foot-long, double ended freight yard, in which a train can enter at one end and exit at the other end, located about 1.5 miles north of **Croton-Harmon Station**. The yard is comprised of seventeen to eighteen tracks. It lies between the main line and the Hudson River and is used to sort and store cars destined to and from various freight shippers and consignees along the Hudson Line.

At **Hudson Station**, there is a small five-track freight yard, other ancillary tracks and a wye that connects to the Claverack Industrial Track, a short branch located to the east to access a cement plant. The plant has recently closed, and the track is out of service.

Dewitt Yard, a major freight classification yard and intermodal facility, is located east of Syracuse (MP 282.5-286). This facility is almost four miles long and consists of two intermodal facilities, a classification/storage yard for general merchandise freight trains, a block swapping⁶ yard closest to the main line, locomotive maintenance facility, and maintenance of way depot. The intermodal facilities at Dewitt perform a “filleting” operation (taking off the top row of containers) on double-stack container trains destined for New England, due to clearance restrictions on the Boston & Albany Line. On eastbound trains, the top containers are removed to reduce the trains’ vertical clearance requirement, while containers are added to westbound trains. CSXT and the State of Massachusetts are working together to improve Boston & Albany Line clearances, while relocating most of the Boston area intermodal activity that occurs at Beacon Park to an expanded intermodal facility in Worcester. With these changes, the Dewitt “filleting” operation may not be necessary or considerably reduced.

Other CSXT yards on the CSXT Selkirk and Mohawk Subdivisions are generally small and consist of the following, from east to west:

- **Kellogg’s Yard**, just east of Amsterdam, on the north side of the main line, consists of a 2.5-mile-long siding, two or three short tracks and the Kellogg’s Industrial track that diverges north.

⁶/ A block is a group of rail cars all destined to a specific location or yard. A through freight train that is not a unit train typically has several blocks of cars. At Dewitt, the many intermodal trains that run on this line from distant points often add or drop blocks of cars that match the train’s destination. Essentially, the trains are swapping blocks with each other – block swapping.

- **Fonda Yard**, on the north side of the main line, consists of a two-mile-long siding and two or three shorter tracks. This used to be the interchange to the Fonda, Johnstown, and Gloversville Railroad, which is now abandoned.
- **Saint Johnsville**, on the north side of the main line, consists of a 3.6-mile-long siding and one or two short tracks near the town center.
- **Little Falls**, on the north side of the main line, consists of a 3.1-mile-long siding with several short spurs.
- **At Utica**, CSXT has ancillary tracks of its own. There are two connections to the Mohawk, Adirondack, and Northern short line, which has taken over most of the remaining track in what was in the past, a major yard, north and east of the station. Just west of the station on the south side of the main line is a small six-track yard and maintenance facility of the New York, Susquehanna, and Western Railroad that diverges south towards Binghamton.
- **At Oneida**, there is a 2.1-mile siding on the south side of the main line and the remnants of a small yard, mostly removed.
- Small yards and junctions are located in Syracuse. **Belle Isle Yard** is on the north side of the main lines and consists of just two to three long tracks. **Solvay Yard** is south of the main line and consists of 16 tracks that curve away to the south. There are a number of diverging branches, industrial tracks, short line railroads, and a wye where CSXT's **Saint Lawrence Subdivision** diverges.

The large number of active yards, industrial sidings and junctions that exist from Dewitt Yard through Syracuse (MP 278.2 to MP 296.8) create significant operating congestion:

- Complex track layouts include yard leads on both ends of **Dewitt Yard**, various industry sidings on both sides of the main line, interchanges with two shortline carriers, and junctions with several CSXT freight lines just west of Syracuse.
- **Goodman Yard** is located in Rochester, serving as the city's primary freight facility. It is less than one mile long. Goodman Yard consists of 17 double ended tracks, a small, currently inactive intermodal facility, now used as a transflo (bulk commodity transfer) facility, and an open air locomotive maintenance facility. Goodman Yard primarily supports local industry and cars to and from the Charlotte Running Track and short-line Rochester Southern Railroad, both connecting to the Rochester Subdivision just west of Rochester.
- The Buffalo Terminal Subdivision includes both a major freight facility, **Frontier Yard**, and a series of complex junctions where various rail lines diverge in several directions. Frontier Yard formerly served as a major CSXT classification yard, but since 2009, the work of sorting cars for through trains has been reassigned to Dewitt and facilities in Ohio. Frontier Yard remains an important location along the Empire Corridor between New York City and Niagara Falls, for handling trains to and from Canada, local freight customers and trains traveling between Boston and New York City and the Midwest.

Other CSXT yards located along the CSXT Rochester and Buffalo Terminal Subdivisions are generally small and consist of the following, from east to west:

- **Lyons Yard**, a small 2,500-foot long yard with eight remaining tracks. Lyons Yard supports local industry and is an interchange point with a Norfolk Southern RR branch.
- **Batavia Yard**, a small 3,000-foot long yard with a controlled siding and three remaining tracks. Batavia Yard is the interchange point with short line Depew, Lancaster & Western Railroad.

There are several freight yards just off the CSXT Niagara Subdivision:

- **Niagara Yard** is a major CSXT freight yard located just south across the tracks from the former Niagara Falls Station and extends east from there for over one mile.
- There are two stub-ended tracks at the former **Niagara Falls Station** designated “the house” and “the middle.” Each track can hold one Empire Corridor train set. Minimal servicing such as refueling, cleaning, and minor emergency repairs can be done to Empire Corridor trains between their runs.

3.4.3 Bridges and Tunnels

Bridges

There are more than 300 bridges located along the Empire Corridor, as well as a number of smaller culverts. Some of the larger bridges are listed in Exhibit E-12.

Empire Corridor South

There are three major bridge structures located on the northern half of the corridor, as shown on Exhibit E-12. There are a large number of small bridges and culverts located on the Hudson Line from Spuyten-Duyvil Bridge to Croton-Harmon Station. Running along the east bank of the Hudson, many small water courses pass under the railroad. There are eight larger structures located on the north end of this segment. There are many small bridges and culverts that drain small water courses into the Hudson River located along the Hudson Line north of Croton-Harmon Station to Poughkeepsie. A few of the bridges are longer and include a small drawbridge.

There are 32 undergrade bridges and 35 culverts located along the CSXT Hudson Subdivision South of Albany segment. Twelve bridges located over waterways are more substantial. There are approximately 26 undergrade bridges and an unknown number of culverts located on the CSXT Hudson Subdivision west of Albany-Rensselaer. Two of the bridges are significant structures and include the Livingston Avenue swing span bridge over the Hudson River. This bridge is in poor condition and programmed to be replaced. The other significant undergrade bridge is located over the Mohawk River in Schenectady.

Empire Corridor West

There are 118 undergrade bridges located along the CSXT Selkirk and Mohawk Subdivisions segment. Most were constructed to accommodate four tracks at 13-foot track centers. There are a few that have been reconstructed and provide only for the two current tracks. Most of the bridges are relatively small. Two of the larger structures are located over Canada Creek. The bridges share the center truss, so that both are still in place, with the railroad using the southern half of the structure. The longest bridge located along the CSXT Selkirk and Mohawk Subdivisions is over the Mohawk River (also known as Canada Creek) at MP 222.74. There are 105 undergrade bridges

located along the CSXT Rochester and Buffalo Terminal Subdivisions segment. Most were constructed to accommodate four tracks at 13 foot track centers or less. The largest concentration of undergrade bridges is located in Rochester. The largest structures include the 1,775-foot Seneca River/Montezuma Marsh open deck bridge near Savannah, dating to 1924 and consisting of 89 spans averaging 20 feet in length. Other large structures include the bridge over the Genesee River in Rochester and several single-span through truss bridges.

Niagara Branch

There are 41 undergrade bridges located along the CSXT Niagara Subdivision segment. All bridges have provisions for two or more tracks.

Tunnels

Most of the Empire Corridor tunnels extend through the southern portion of the Empire Corridor (refer to Exhibit E-13), but tunnels are also located on the Niagara Branch, as shown in Exhibit E-13. Much of the Empire Corridor in Manhattan is located within a tunnel until 123rd Street, with some daylighted sections. Seven of the tunnels carry the railroad through steeper terrain, including the Hudson Highlands, along the Hudson Valley in Westchester and Putnam counties. One tunnel extends through Rhinecliff in Dutchess County, and two tunnels extend along the Niagara Branch.

Exhibit E-12—Major Bridges along Empire Corridor

Segment	Milepost Location	Description
Empire Connection from Penn Station to Spuyten Duyvil Bridge	MP 5.3	2,040-foot long double track viaduct against the Henry Hudson Parkway to the west and close to the Riverside Drive viaduct to the east
	MP 9.2	184-foot long double track bridge over Dyckman Street
	MP 10.0 Harlem Ship Canal	620-foot long bridge consisting of three 110-foot long, double track, and a 290-foot long, double track, swing span bridge; however only a single track on east side at present
Metro-North Hudson Line from Spuyten-Duyvil to Croton-Harmon	MP 14.9 - Main Street, Yonkers	70-foot long bridge for 5 tracks, only 4 in use
	MP 15.0 - Dock Street, Yonkers	Variable width bridge, from 44 to 140 feet as road widens under tracks, that supports four tracks and part of station platforms
	MP 15.1 - Wells Ave., Yonkers	66- to 74-foot long bridge supports four tracks plus station platforms
	MP 15.4 - Ashburton Ave., Yonkers	54-foot long bridge for six tracks, only five tracks in use
	MP 26.9 - Philipse Manor	30-foot long concrete box culvert over waterway supports four tracks
	MP 29.6 - Scarborough	56-foot long bridge supports four tracks and northerly side platforms of Scarborough Station over water
	MP 30.9 - Ossining	40-foot long bridge over stream that supports four tracks just north of Ossining Station
	MP 32.7 - Croton River	4 - 100-foot long bridge with two center tracks on through truss and two outer tracks on independent bridges
CSXT Hudson Subdivision from Poughkeepsie to Albany-Rensselaer	MP 85.45 - Vanderburgh Cove	105-foot long bridge originally for four tracks, only two tracks on structure in use. Westerly bay removed, easterly bay still in place for railroad maintenance road
	MP 95.7	Three small bridges along the Tivoli Bay Causeway, from south to north: 65-foot long bridge with two tracks only; 65-foot bridge with two tracks only; 110 feet long bridge with two tracks only

Exhibit E-12—Major Bridges along Empire Corridor

Segment	Milepost Location	Description
	MP 97.35	Cruger Island – 80-foot long bridge
	MP 87.96	Soldiers Brook – 52-foot long bridge
	MP 109.03– Janson Kill	342-foot long bridge– main center portion of bridge is a 274-foot long span with a short 44-foot long south approach and a 24-foot long north approach
	MP 115.57 – North Bay	132-foot long bridge of newer construction
	MP 118.30 – Flood Brook	80-foot long bridge
	MP 118.58 – Stockport Creek	510 feet long bridge with 3-170-foot spans
	MP 133.35 – Miitzes Kill	50-foot bridge
	MP 133.95– Sampson Creek	30-foot bridge
	MP 135.24 – Moordener Kill	62-foot bridge with four bays
	MP 135.82 – Stoney Point	66-foot structure consisting of two parallel bridges for four tracks, two existing tracks on either side
CSXT Hudson Subdivision – West of Albany-Rensselaer	Livingston Avenue Drawbridge over the Hudson River	1,270 feet double track bridge with three, fixed trusses and several girder spans on the east side of the river with a main span consisting of a 262-foot swing span. This bridge is in poor condition and programmed to be replaced.
	Mohawk River in Schenectady	720-foot multiple span of girders supports double track. Track exists only on the south (upstream) side of the structure.
CSXT Selkirk and Mohawk Subdivisions	MP 209.83 Canada Creek	Two span, dual through truss with two 90-foot spans. The bridges share the center truss so that both are still in place, with the railroad using the southern half of the structure.
	Park Street, MP 291.62	Bridge has been reconstructed and supports only two tracks
	Onondaga Creek, MP 292.18	Bridge has been reconstructed and supports only two tracks
	MP 222.74- Mohawk River (also known as Canada Creek)	Structure consists of 8 - 75-foot deck plate girders, with four track bays in place and the railroad occupying the two southerly bays
CSXT Rochester Subdivision and Buffalo Terminal Division	North Plymouth Avenue in Rochester	Bridge supports three tracks
	Seneca River	Largest structures include the 1,775-foot bridge near Savannah over the Montezuma Marsh
	Genesee River	Bridge over the river in Rochester

Exhibit E-13—Tunnels along Empire Corridor

Segment	Milepost Location	Description
Empire Corridor South	MP 0 to MP 5	Tunnel from Penn Station to 123 rd Street, with daylighted sections occurring between the following city streets: 36 th – 39 th ; 43 rd – 46 th ; 48 th -49 th ; 60 th -61 st
	MP 36.62	Osca Tunnel – 250 feet long
	MP 43.62	Little Tunnel – 75 feet long
	MP 44.40	Middle Tunnel – 300 feet long
	MP 45.07	Route 6 Tunnel – 175 feet long
	MP 50.06	Garrison Tunnel – 450 feet long
	MP 54.52	Breakneck Tunnel – 550 feet long
	MP 91.33	Rhinecliff Tunnel – 230 feet long
Niagara Branch	MP QDN2.1	Two tunnels run under I-190/Route 5 interchange, both 500 feet long
	MP QDN2.2	

3.4.4 Grade Crossings

Grade crossings occur where the tracks cross a road at the same elevation. Grade crossings can present a safety concern due to the potential for collision of a train with a motor vehicle, pedestrian, or bicyclist. Section 2.6 of the Tier 1 Final EIS includes a discussion of safety considerations with grade crossings. There are a total of 365 grade crossings located along the Empire Corridor, according to information from New York State Geographic Information System (NYSGIS). Of these, 138 are private crossings and 227 are public crossings.

Empire Corridor South

There are no grade crossings located on the southernmost Empire Connection segment.

There are no public crossings located on the Hudson Line from Spuyten-Duyvil to Croton-Harmon Station. There are several grade crossings located along the Hudson Line north of Croton-Harmon Station, including both public and private crossings.

There are 9 public crossings and 14 private crossings on the CSXT Hudson Subdivision south of Albany. The public crossings all have automatic warning systems, and several of the more active private crossings also have active warning systems.

There are 5 public crossings and 3 private crossings along the CSXT Hudson Subdivision West of Albany-Rensselaer. All public crossings have automatic highway crossing warning systems. The private crossings have only passive warning devices (signage).

Empire Corridor West

There are 18 public crossings and 80 private crossings located along the CSXT Selkirk and Mohawk Subdivisions. All of the public crossings have automatic highway crossing warning systems, as do a few of the more active private crossings. Most of the private crossings have only passive warning systems.

There are 56 public crossings and 40 private crossings in the CSXT Rochester and Buffalo Terminal Subdivisions. All of the public crossings have automatic highway crossing warning systems and a few of the more active private crossings do also. Most of the private crossings have only passive warning systems.

Niagara Branch

There are 12 public crossings and approximately 14 private crossings in the CSXT Niagara Subdivision segment. All of the public crossings have automatic highway crossing warning systems. It appears the private crossings have only passive warning systems.

3.4.5 Rolling Stock

Rolling stock on the Empire Corridor consists of locomotives pulling unpowered coaches. The locomotives operating on the Empire Corridor South are dual mode models, which can operate using both diesel engines and electric power, and provide for electrified third rail access to Penn Station.

Diesel locomotives cannot operate in Penn Station where all tracks are electrified, most with both over running contact rails (third rail) and overhead catenary. Some Empire Corridor West trains change engines in Albany from the dual mode locomotives to conventional diesel locomotives. All three locomotive types date to the early 1990s and were originally built by General Electric. All are capable of 110 mph operation and regularly achieve this speed in segments of the corridor between Hudson and Schenectady, but a long period of acceleration is required.

The cars are Amfleet I coaches built from 1974 to 1978, with various combinations of coach, café, and business class configurations. Empire Service passenger trains typically consist of one locomotive and five Amfleet coaches. The Lake Shore Limited train is much longer, typically consisting of two locomotives, a baggage car, three sleeping cars, a dining car, and four or more coaches.

Amtrak recently concluded a contract signing with Construcciones y Auxiliar de Ferrocarriles (CAF), a Spanish rolling stock supplier, to replace the 1940s era sleeper, baggage, and dining cars used on the Lake Shore Limited. No other Empire Corridor rolling stock replacement is currently underway.

NYSDOT is an active participant in the Next Generation Corridor Equipment Pool committee established by Amtrak under the requirements of Section 305 of the Passenger Rail Investment and Improvement Act of 2008 (PRIIA). Specification development has been completed for both the Next Generation locomotives and the single-level coaches to be used on eastern U.S. trains. Future equipment used on the Empire Corridor will meet the 305 specification.

Appendix F Capital, Operating and Maintenance Costs Estimating Methodology

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1. Introduction

In configuring alternatives for the Empire Corridor High Speed Rail Program, it was necessary to develop costs for required additional rail rolling stock (coaches and locomotives), and for the infrastructure improvements that would produce the intended service improvements.

2. Rolling Stock Cost Estimating Methodology

The following material presents the results of an analysis prepared to estimate a reasonable capital cost (in November 2011 values) for the following types of equipment:

- 79 to 110 mph diesel locomotive hauled, five car train sets
- 125 mph, 400 seat (five passenger car) electrically powered dual mode train sets, either dual mode locomotive hauled or dual mode Diesel/Electric Multiple Units
- 160 mph, 400 seat electrically powered train sets, either locomotive hauled or EMU
- 220 mph electrically powered High Speed Rail (HSR) EMU train sets.

The vehicles operating up to 125 mph will likely be similar to equipment currently in operation on Amtrak's Empire and Northeast Corridors (for either Amtrak or New Jersey Transit). This equipment already complies with the Federal Railway Administration (FRA) Tier I structural requirements. The vehicles operating over 150 mph will need to comply with the FRA's Tier III requirements. As there is no equipment currently operating in North America that operates at these speeds, high speed trains now operating in both Europe and Asia would need to be re-developed to meet these requirements. This higher speed equipment was analyzed in support of the alternatives scoping process through which the five alternatives selected for detailed analysis was conducted.

Vehicle capital costs were estimated based largely on contract values for vehicles of similar capacities and capabilities. Allowances for the additional development cost needed to produce vehicles suitable for service in this corridor were included. It was assumed that there would not be an already developed Tier III compliant vehicle available.

The estimated capital cost per train set in current dollars is in Exhibit F-1:

Exhibit F-1 - Capital Cost Per Train

Capital Cost Per Train set	Baseline Estimate	Suggested Range (-5% to +5%)
Order of 14 Five Car Diesel Train sets (79-110 mph)	\$23.6 million	\$22.4 - \$24.8 million
Order of 29 Five Car Diesel Train sets (79-110 mph)	\$21.8 million	\$20.7 - \$22.8 million
Order of 19 Five Car Dual Mode Train sets (125 mph)	\$25.2 million	\$23.9 - \$26.4 million
Order of 17 Seven Car Electric Train sets (160 mph)	\$56.9 million	\$54.0 - \$59.7 million
Order of 16 Eight Car Electric HSR Train sets (220 mph)	\$67.4 million	\$64.0 - \$70.8 million

Note: Capital costs have been updated to reflect the Programmatic EIS base year for capital costing of 2015.

The 125 mph dual mode train is assumed to be comprised of one dual mode locomotive and five unpowered coaches for the purpose of capital cost estimates. Capital costs at the top-end of the suggested range were used to ensure that the program budgets are conservatively estimated and to avoid the public perception of appearing to under-estimate vehicle procurement costs.

NYSDOT is in the early stages of developing their next generation of passenger equipment to service the Empire Corridor in New York State. To support this development process, HNTB was asked to estimate capital costs for these new generation train sets. The options costed were:

- 79-110 mph corridor utilizing dual mode diesel-electric locomotives hauling five passenger cars
- 125 mph, 400 seat (five passenger car) electrically powered dual mode train sets, either dual mode locomotive hauled or dual mode Diesel/Electric Multiple Units
- 160 mph corridor utilizing 400 seat electrically powered train sets
- 220 mph corridor utilizing 400 seat electrically powered train sets

Included in all of the above cases are food service cars on each train. It was assumed that all the trains would be single level and that they would need to be delivered in time for service to begin in 2018.

All of the equipment options are assumed to comply with the relevant FRA structural requirements. That is to say that the equipment would be built to US standards and would not be expected to operate under an FRA waiver. For the lower speed corridors (i.e. 125 mph or less), there already exists FRA Tier I compliant equipment similar to, if not identical to, equipment that would be suitable for service on the Empire Corridor. It is more problematic to develop methods of costing equipment for the higher speed alternatives (160 mph and 220 mph). The only true HSR equipment operating

on the Amtrak network are the Tier II compliant 150 mph Acela train sets first put into operational service approximately 10 years ago. However, these train sets are not suitable for the NYSDOT higher speed service and instead trains built to the FRA's Tier III regulations would be required for speeds over 125 MPH. While most recent HSR trains have been more or less standard in design, some suppliers have built unique vehicles as in the case of the Siemens built Russian Velaro HSR train set. These procurements allowed for a comparative analysis to be performed as verification of the estimated vehicle capital costs.

The estimated market capital costs for the NYSDOT train sets were developed using an escalated average of several contract values from recent procurements. The pricing for the Tier I compliant vehicles was largely based on similar domestic procurements. The estimated capital costs for the higher speed Tier III vehicles were based primarily on European vehicle procurements of equivalent speed capabilities.

With the exception of the dual mode diesel locomotives and the lower speed passenger cars, it is expected that the vehicles will be based on existing European designs and built with European components. Consequently, an escalation factor based on European (Eurostat) economic indicators was used to inflate all of vehicle unit capital costs to current economics. The specific data used is as follows:

Material (50% of original vehicle capital cost):

- Eurostat C25 – Manufacture of metal products except machinery and equipment
- Eurostat MIG – Intermediate and Capital Goods Industry

Labor (40% of original vehicle capital cost):

- Eurostat C27 – Manufacture of electrical equipment
- Eurostat C30 – Manufacture of other transport equipment
- Eurostat CAP - Capital Goods

Note that only 90 percent of the vehicle capital cost was inflated using this data. The remaining 10 percent was assumed to be fixed. After inflating the vehicle capital costs in Euros, the costs were converted to US dollars using currency exchange rate data from Olsen and Associates (oanda.com).

This analysis does not consider any physical variation in the different train sets. Interior appointments, power supply and train control systems and even the numbers of passenger cars can differ from one order to the next. As such, the average capital cost developed from this analysis provides only a starting point. In addition, a ten percent contingency was added to the average vehicle capital cost to account for some of these discrepancies.

The NYSDOT HSR train sets will be, like the Amtrak Acela train sets already in service, considerably different from more or less standard Velaro or TGV/AGV train sets in service overseas. As noted above, this is because the vehicles will need to meet the much more stringent FRA Tier III

crashworthiness standards and not the UIC standards generally in effect elsewhere. Consequently, considerable re-design and testing will be needed to develop a satisfactory vehicle. This effort is accounted for by estimating the incremental engineering, material and set-up costs needed to produce this vehicle.

The other vehicles under consideration will also need varying degrees of incremental engineering. Although dual mode diesel-electric locomotive are being developed that will meet the 2015 Tier 4 diesel emissions standards, further development will likely be required to directly address Empire Corridor propulsion requirements. These costs, including production set-up costs, were estimated for each vehicle type.

In all cases, the engineering costs were developed by estimating the additional engineering hours needed for the duration of the program and then by applying standard industry hourly rates. For the high-speed equipment, a five-year development and three year production schedule was assumed based on the schedules included in the January 2010 UIC report titled "Necessities for Future High Speed Rolling Stock." Shorter development schedules were assumed for the 125 mph and slower equipment.

Material and set-up costs were estimated based on the scope of the program using several recent domestic railcar procurements as points of reference.

These additional recurring and non-recurring costs were added to the average escalated capital cost developed as noted above to come up with estimated capital costs for each train type. In the case of the diesel-powered trains, the non-recurring costs were applied to two different order sizes (14 and 29 trains). The results are listed in the table above. These capital costs include the following:

- Engineering, testing and project management costs for the duration of the program
- Manufacturing set-up costs
- Other non-recurring costs including vehicle mock-ups, training, manuals, spare parts, special tools and diagnostic equipment

The estimated vehicle capital costs do not include any maintenance facilities or contracts, management contracts as well any internal costs for NYSDOT needed to manage this program.

Given the very preliminary nature of the proposed high speed corridor, a simple comparative analysis was done between the estimated capital cost per NYSDOT HSR train sets and two other non-standard HSR train sets.

The two HSR train sets that were used to compare pricing were the eight Russian Railways Velaro (Velaro RUS) train sets ordered from Siemens in 2006 and the Amtrak Acela train sets. Both projects include considerable engineering effort needed for these projects (the Velaro RUS had to be redesigned for the larger Russian loading gauge and for different power supplies).

The average escalated capital cost for these two projects is approximately \$70 million per train set as compared to the \$55-60 million capital cost estimate for the NYSDOT HSR train sets. However, the Velaro RUS order was for only eight vehicles and the Acela train sets were ordered some time ago (1996) from Bombardier/Alstom, and delivered into operation in 2000. To provide a better comparison, the engineering and other non-recurring costs that were developed for the NYSDOT HSR train sets were applied over eight 'standard' HRS vehicles instead of the 16 vehicles as above. The resulting capital cost estimate is within 10 percent of the escalated Velaro Russian Railways capital cost, thus validating the estimated incremental costs.

Exhibit F-2 shows the Empire Corridor fleet requirements for each of the Alternatives, comparing them incrementally versus the Base Alternative (No Action).

Exhibit F-2 – NYSDOT Empire Corridor Fleet Requirements

Table 1. NYSDOT Empire Corridor Fleet Requirements												
	Current		Base Alternative		90A		90B		110		125	
	Required	Incremental	Required	Incremental	Required	Incremental	Required	Incremental	Required	Incremental	Required	Incremental
Start Location												
Albany	6	0	6	0	6	0	7	1	7	1	6	0
Niagara Falls	2	0	2	0	5	3	5	3	5	3	2	0
New York (Sunnyside Yard)	2	0	2	0	4	2	3	1	3	1	2	0
Rutland	1	0	1	0	1	0	1	0	1	0	1	0
Montreal	1	0	1	0	1	0	1	0	1	0	1	0
Toronto	1	0	1	0	1	0	1	0	1	0	1	0
Buffalo (Dual Mode)											8	8
New York (Dual Mode)											6	6
TOTAL (Before Spares)	13	0	13	0	18	5	18	5	18	5	27	14
Spare Factor	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
TOTAL (With Spares)	16	0	16	0	22	6	22	6	22	6	33	17

The Base Alternative has no incremental fleet requirement versus today's operation. Exhibit F-3 shows the estimated Empire Corridor fleet capital costs by Alternative in 2015 dollars. The total figures at the bottom of the table include a 5 percent contingency. In addition to the figures shown, a 12 percent allowance for procurement support should be included. This sum reflects the cost of specification development (to the extent not already specified by the current PRIIA Next Generation Equipment Committees), manufacturing inspections, testing and commissioning.

Exhibit F-3 - NYSDOT Empire Corridor Fleet Capital Costs

Table 2. NYSDOT Empire Corridor Fleet Capital Costs (In 2015 Dollars)					
	Base Alternative	90A	90B	110	125
Incremental Fleet Requirement (With Spares) - Diesel	0	6	6	6	0
Incremental Fleet Requirement (With Spares) - Dual Mode	0	0	0	0	17
2011 Capital Cost Estimate (Per Train Set)	\$ 23,600,000	\$ 23,600,000	\$ 23,600,000	\$ 23,600,000	\$ 25,200,000
Contingency (5%) (Per Train Set)	\$ 1,180,000	\$ 1,180,000	\$ 1,180,000	\$ 1,180,000	\$ 1,260,000
2011 Capital Cost Estimate (with Contingency) (Per Train Set)	\$ 24,780,000	\$ 24,780,000	\$ 24,780,000	\$ 24,780,000	\$ 26,460,000
2015 Capital Cost Estimate (with Contingency) (Per Train Set)	\$ 28,436,000	\$ 28,436,000	\$ 28,436,000	\$ 28,436,000	\$ 30,363,000
Total 2015 Capital Cost - Vehicles	\$ -	\$ 170,616,000	\$ 170,616,000	\$ 170,616,000	\$ 516,171,000

Note: 3.5% Annual Inflation Rate Assumed

3. Infrastructure Capital Cost Estimating Methodology

The New York State Department of Transportation (NYSDOT) is evaluating investment alternatives to increase speed, reduce travel time, and improve the schedule reliability of Amtrak's Empire Corridor passenger rail service. NYSDOT, with FRA concurrence, has identified five alternatives by which to achieve these program goals. A major factor in evaluating the relative merits of these alternatives is their capital cost, which includes the cost of upgrading existing or building new track, grade crossings, railroad signal and switch systems, and propulsion improvements, combined with the cost of locomotives and passenger coaches (rolling stock or "equipment") and the cost of new or expanded maintenance facilities and train stations. This document explains the methodology by which these capital costs were developed for the five Empire Corridor High Speed Rail Program alternatives, covering property acquisition, design and permitting, construction, and overall contingency estimates to address uncertainty at this early stage of the program.

In general, for a Tier 1 EIS, costs of alternatives are estimated at a high level. They are not detailed for two reasons:

1. There is insufficient engineering detail available at this stage to permit precise estimates; alignments are conceptual, and it is not possible to be precise about the number and

- specific design of bridges, new track and railroad signals, structural and earth work (cut and fill) requirements, grade separations at rail/road crossings, etc.; and
2. The actual year of construction of each improvement is not known, so the precise net present value (NPV) of the future year investment cannot be reliably predicted in current dollar terms.

Given these two conditions, it is not possible to produce precise cost estimates. Rather, unit costs are applied consistently across all alternatives. For example, a unit cost for simple bridge structures may be stated as \$20,000/linear foot (for a two-track bridge). Thus, if the bridge is 60' long (spanning, perhaps, a simple two-lane road), the construction cost of the bridge would be estimated to be \$1,200,000, irrespective of the intended year of construction. As such, the cost of alternatives for which improvements will be constructed further into the future will be understated relative to alternatives for which most of the improvements will be constructed sooner, since the erosive effects of inflation will ultimately lead to higher costs in absolute dollar terms as time passes. Thus, if inflation is estimated at 3.5 percent over a five-year period, a bridge which costs \$1M in the first year, will be likely to cost 3.5 percent more each successive year, \$1,003,500 in the second year, \$1,007,015 in the third year, and so forth.

The purpose of a Tier I EIS is to ensure that costs are estimated in consistent terms across the alternatives being evaluated, such that values for each alternative can be reasonably compared. This approach supports rational decision making by NYSDOT and the public based on common understandings of the likely relative cost of each alternative compared to the others.

To ensure such commonality in the final cost estimates, this analysis has employed unit costs for all major elements of the required railroad system improvements. These unit costs are taken either from recent costs in the marketplace or from recognized industry values typically employed in estimating construction costs. Unit costs may be different by region or type of construction. For example, the cost of trenching for utilities may be higher in the Northeast than in the Southwest, reflecting both the different costs of living and labor, and, possibly, the simpler work of excavating in sandy desert material than in rock-laden heavy, wet soils. In many cases, "typical" costs for construction activities and elements are listed by city or region, to address these distinctions.

Exhibit F-4 gives unit costs for the various components from which the infrastructure estimates were compiled for each alternative.

Exhibit F-4 - Unit Costs by Category of Work

Property		Track & Signals		Bridges & Structures		Roads & Crossings	
PROPERTY ACQ. (per Acre)		SUBGRADE PREP. & SUB-BALLAST		EROSION CONTROL		HIGHWAY RELOC. (per SY)	
\$40,000	Marsh	\$12.00	per SY	\$12	per LF	\$140	Secondary
\$85,000	Farmland					\$224	Highway
\$200,000	Suburban						
\$800,000	Town						
BUILDING ACQUISITION AND REMOVAL (per SF)		NEW TRACK (per Track-Foot)		DRAINAGE PIPES & BOX CULVERTS (per SF)		GRADE CROSSINGS PRIVATE (Each)	
\$200	Residence	\$175	Yard or Spur	\$125	Pipe		
\$350	Business	\$225	Main Track	\$1,000	60-100 sf	\$5,000	per track
				\$1,800	100-140 sf		
				\$2,300	140-180 sf		
CLEARING (per Acre)		TRACK THROWS (per Track-Foot)		BRIDGE DEMO (per SF)		GRADE CROSSINGS PUBLIC (per Track-Foot)	
\$12,000	Country	\$40	5 feet or less	\$175	Conc.	\$2,800	Single Trk.
\$16,000	Town	\$80	5 to 13 feet	\$85	Steel Girder	\$3,200	Double Trk.
\$20,000	City			\$125	Steel Truss	\$3,600	Tripple Trk.
						\$4,200	Four Trks.
FILL SECTION (per CY)		RETIRE TRACK (per Track-Foot)		NEW BRIDGES (per SF)		WARNING SYSTEM (Each)	
\$12	Open	\$25	Main Trk.	\$400	Conc. 36-48'	\$350,000	Small Rural
\$20	Retained	\$15	Yard Trk.	\$375	Steel 30-60'	\$400,000	Medium
		\$12	Unused Trk.	\$650	Steel 60-80'	\$500,000	Larger Crossing
				\$900	Steel 80-120'	\$8,000	Farm or Private
EXCAVATION (per CY)		RETIRE TUNROUTS (Each)		RETAINING WALLS (per SF)			
\$12	Earth	\$30,000	No. 8	\$75	11-20' MSE		
\$50	Rock	\$32,000	No. 10	\$65	2-10' Conc		
		\$54,000	No. 15	\$120	10-20' Cant.		
		\$72,000	No. 20	\$180	over 20' Cant.		
FENCING (per LF)		TURNOUTS (Each)					
\$20	8' CLF	\$ 85,000	No. 8				
\$24	8' w/BW	\$ 95,000	No. 10				
\$40	Security	\$ 195,000	No. 15				
		\$ 235,000	No. 20				
		\$ 2,000,000	No. 32.7				
DITCHING (per LF)		ADDITIVE FOR COMPLEX PHASING					
\$8	2 ft. or less	Variable	20% to 150%				
\$12	2 to 4 feet		of Trackwork Value				

For the Empire Corridor program, these unit costs were applied to the estimated or measured amount of each item. For example, for Alternative 110, a total of 1,118,890 linear feet of fencing were estimated to be required, at an average cost of \$4,248/mile, for a total of \$90,203,000 for this item. Similarly, costs were generated for all the other cost categories, based on measurements along the entire 463-mile Empire Corridor right of way for each alternative.

Engineering design and permitting costs are generally derived on the basis of the scale and complexity of the intended construction job, and range between 8-15 percent of the cost of construction. Thus, for purposes of high level project cost estimating, a project that was estimated to cost \$100 million would be expected to have a design and permitting cost between \$8-\$15 million. Since rail construction is quite intricate, the engineering and permitting costs are generally anticipated to be in the higher range, and the 15 percent multiplier was applied to the derived construction costs for each alternative.

Property acquisition was estimated based on the need to straighten curved track sections, as well as for land with which to implement grade separations in place of at-grade vehicular crossings. Depending upon the location of each improvement, distinctions were made among rural, suburban and urban land, and property unit costs were applied to each, on the basis of current average values in each geographic area applied to the acreage required in that area.

A contingency is a factor applied to capital cost estimates associated with unknown or unknowable conditions. Until geotechnical analysis is performed, for example, the structural support requirements for a bridge cannot be precisely estimated. Therefore, after applying average unit costs with which to estimate the bridge cost, a contingency factor is applied to accommodate the possibility of the bridge being more expensive in unfavorable geology. Equally, since property values cannot be known until the actual acquisition, average unit costs are subjected to a significant contingency factor as well. Applying these contingency factors ensures that a realistic appraisal of the true potential cost of an alternative can be assessed. Normally, at the initiation of a project, a contingency as high as 50 percent may be assigned, reflecting the absence of specific technical data with which to precisely estimate costs of each element of the project. Combining the unit-cost-derived project estimate with the contingency gives a reasonable value to carry going into design. As design advances and more is known, actual costs can be estimated with greater precision and the contingency reduced.

In the Empire Corridor High Speed Rail program, mile-by-mile engineering analysis of the existing rail infrastructure was undertaken to determine the approximate length of new track, straight track, higher-speed switches, new switches, grade crossings, earth work, bridge structures, railroad signal system augmentation and improvement, and propulsion system that would be needed for each alternative. The cost of these improvements were then estimated based on unit costs for equivalent work in current dollar terms. Despite the mile-by-mile assessment, however, considerable uncertainty remains associated with the timing of each improvement, work-around issues flowing from the need to maintain both freight and passenger service during construction, community issues associated with local traffic requirements where grade crossings must be maintained, site-specific geotechnical information for bridges, environmental permitting requirements for bridges over regulated waterways and wetland areas, contamination levels in soils to be disturbed during construction or requiring disposal off site, and utility agreements necessary to address utility relocations that may be required. All of these factors can significantly influence actual construction costs when the improvement finally goes to construction.

To establish practical, comparable costs among the alternatives in view of these uncertainties, a hard-construction contingency of 35percent has been applied to the estimated construction costs of the elements contained in each alternative. Because the complexity of designing the rail improvements remains uncertain without further clarification as to final alignments, and because the amount and type of property required also cannot be precisely defined until final alignments are established, a 35 percent contingency was applied to the engineering design, permitting and property acquisition costs as well. This contingency is felt to be appropriate to the level of detail developed for the alternatives at this stage in the program. It is not as high as a 50 percent contingency that might be applied if the program cost were estimated on an overall “cost/mile” value for generalized new rail construction, nor is it as low as the 10 percent contingency that might be applied when detailed design has been completed and most of these facts are reasonably well understood. Rather, it strikes a balance between the mile-by-mile specific decisions about the particular track, railroad signal and propulsion improvements that will be needed, and the lack of specific design work necessary to ensure that these improvements can be built as envisioned.

The Empire Corridor High Speed Rail program capital costs for infrastructure improvements were estimated on the basis of unit costs for specific track, railroad signal, switch, propulsion, earthwork and property elements applied to a mile-by-mile assessment of exactly which of these improvements will be needed for each alternative, these capital costs then adjusted with a 35 percent contingency to reflect uncertainty about actual conditions and design feasibility for each identified improvement.

Appendix G Environmental Inventory and Impact Assessment

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Foreword

This appendix presents the supplemental documentation supporting the Tier 1 Draft EIS socioeconomic and environmental analysis. This companion document to the Tier 1 Final EIS presents the detailed socioeconomic and environmental inventory and mapping performed for the Tier 1 Draft EIS, with selected updates (e.g., for updates of population/employment/business districts and addition of more recent floodplain and wetland GIS data). This appendix presents the comprehensive inventory and the impact assessment for the other Build Alternatives considered, but dismissed. The Tier 1 Final EIS presents an overview comparison of impacts of alternatives considered, and a detailed assessment for the Preferred Alternative, Alternative 90B.

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1. Land Use

1.1 Existing Conditions

The following sections describe the land use characteristics of the 90/110 and 125 Study Areas along Empire Corridor South and Empire Corridor West/Niagara Branch. The land uses for these study areas are summarized in Exhibits 4-2 and 4-3 of the Tier 1 Final EIS and are shown in Exhibit G-1. Exhibit G-2 evaluates the program's consistency with the New York State Smart Growth Infrastructure Policy Act, and Exhibit G-3 addresses the program's consistency with regional and local master plans.

1.1.1 Empire Corridor South

The Empire Corridor South segment, from New York City to Rensselaer, extends 142 miles and in many locations closely follows the east bank of the Hudson River. The study area extends through Manhattan (New York County) and the Bronx (Bronx County). This program segment also includes the study area counties of Westchester County, Putnam County, Dutchess County, Columbia County, and Rensselaer County. The location of the rail line in close proximity to the river's edge in many locations is reflected by the predominance of surface waters, wetlands, and undeveloped forest area in many locations where the river bank is undeveloped or consists of parkland.

The most urbanized segment of the study area extends roughly 10 miles through New York City from Pennsylvania Station (southern terminus of the Empire Corridor) in Manhattan to the northern border of the city of Yonkers in Westchester County. In New York City, the county boundaries coincide with the boroughs. In **Manhattan (New York County)**, the Empire Corridor rail line runs under and along the west side of Manhattan Island parallel to the Hudson River. Pennsylvania (Penn) Station is situated under the Pennsylvania Plaza/Madison Square Garden complex between Seventh Avenue and Eighth Avenue and 31st and 33rd Streets in midtown Manhattan. The high-density development around Pennsylvania Station are primarily mixed urban uses including hotels, retail, restaurants, office buildings, retail and other services. Future plans being overseen by various public entities are to create an annex to Penn Station in the James Farley Post Office Building across Eighth Avenue and provide an aboveground entrance, as part of the Moynihan Station improvements. The Empire Corridor travels west underground from Pennsylvania Station, under the Hudson Yards and then continues north under Hell's Kitchen (crossing the Lincoln Tunnel) and the west side of Midtown Manhattan. This underground segment of railroad crosses over to Route 9A along the Hudson River (known as the West Side Highway, or Joe DiMaggio Highway, becoming Henry Hudson Parkway at 72nd Street) west of Central Park. The railroad eventually surfaces to street level in Riverside Park, east of the Henry Hudson Parkway and west of Riverside Avenue north of 123rd Street and crosses into the Bronx over the Harlem River Bridge. The Empire Corridor and the Metro-North Railroad Hudson Line commuter rail meet in the Spuyten-Duyvil section of the Bronx. In Manhattan, approximately 63 percent of the land cover in the study area is characterized as mixed urban, which includes high density retail, office, and residential uses. Transportation and utilities comprise 19 percent of the land cover in Manhattan, which includes Route 9A, and commercial services total 13 percent of the total land area.

In **Bronx County**, 2.6 miles of the rail line closely borders the east side of the Hudson River, and surface waters account for roughly 50 percent of the land cover in the study area. Approximately 30 percent of the land cover within the study area is classified as mixed urban uses or commercial services, and residential uses account for 17 percent of the land cover. Riverdale is the major urban

center of the Bronx, primarily consisting of medium to high density residential uses and retail, commercial, and other services. Riverdale Park is the major recreational and natural area along the rail corridor in Bronx County.

The Hudson Valley Region north from New York City include Westchester, Putnam, Dutchess, and Columbia counties, which extend along the east side of the Hudson River. Approximately 31.5 miles of the railroad extends through **Westchester County**. The study area in Westchester County includes residential (16%), commercial/industrial (20%), and mixed urban (10%) uses, with transportation/utilities accounting for another 8 percent. Surface waters, principally the Hudson River, and forested areas account for approximately 46 percent of the land cover in the Westchester County study area. The southern portion of Westchester County contains moderate to high-density residential areas with mixed urban uses that occur predominantly in the more developed communities along the Hudson River from Yonkers north to Tarrytown, where the New York State Thruway (Interstate Routes 287/87) crosses the railroad at the Tappan Zee Bridge. The northern portion of Westchester County contains a higher proportion of forested areas with several developed areas near Peekskill and Croton-on-Hudson abutting the Hudson River.

Within Westchester County, the city of Yonkers consists of mixed urban (30%), commercial or industrial (53%), or transportation/utilities (17%) in the study area. The Yonkers Amtrak/Metro-North Railroad Station, 14 miles north of Penn Station, serves the downtown area of Yonkers and was renovated by the Metro-North Railroad in 2004. The adjoining land uses include the New York Department of Motor Vehicles and the Yonkers Public Library to the northeast and the U.S. Post Office to the southeast. The land uses around the station include the Science Barge docked on the Hudson River, a floating science museum and working urban farm, on the west side of the tracks and restaurants, shopping and residential complexes and transportation uses, and associated parking facilities.

In Westchester County, the land uses around the Croton-Harmon Station, 22 miles to the north of Yonkers Station, include Croton Point County Park on a peninsula in the Hudson River to the southwest of the station, a rail layover facility on the west side of the tracks, and a residential complex and marina to the west (on the other side of the layover facility) along the Hudson River. To the east of the station, a large wetland area and Paradise Island County Park are situated on the southeast and areas east of the station include a grocery store, Goodwill Industries, a health club, and other services (gas station and restaurants) and residential neighborhoods.

In **Putnam County**, the 600-foot-wide land use study area includes increasingly rural or undeveloped areas. In the study area in Putnam County, land uses bordering the 9.3-mile-long corridor are primarily natural areas. Forested, surface water bodies, and associated wetlands account for 98 percent of the total area. The incorporated village of Cold Spring is the only community that abuts the rail corridor and includes a mix of residential and commercial uses.

The land cover types in **Dutchess County** are primarily forested areas and surface waters, which account for 77 percent of the study area. Only 15 percent of the land area within the 45.6-mile-long study area in Dutchess County is in residential, industrial use, mixed urban use, or transportation. Agricultural, wetlands, and barren land comprise the remaining 8 percent of the study area. The Empire Corridor passes through several smaller communities including Beacon, Poughkeepsie, and Rhinebeck, which are located adjacent to the Hudson River.

In Dutchess County, the city of Poughkeepsie is located in the Hudson Valley approximately midway between New York City and Albany. The city is bordered by the Hudson River to the west and the

town of Poughkeepsie on the north, east and south. A majority of the land cover (59%) in the study area in the city of Poughkeepsie is characterized as either forested or surface water (the Hudson River). Within the central business district, the principal land uses include industrial, commercial, and mixed urban totaling approximately 23 percent of the corridor, with transportation/utilities totaling another 8 percent. Land uses around the Poughkeepsie Amtrak/Metro-North Railroad Station, 41 miles north of the Croton-Harmon Station, include several surface parking facilities for rail passengers and park users, a new residential condominium development, referred to as the Piano Factory, and the Mid-Hudson Children's Museum to the north, and a waterfront park to the west along the Hudson River side of the railroad tracks. Approximately ¼ mile to the north is the Walkway over the Hudson State Park, a former rail bridge and associated interpretive uses, spanning the Hudson River. The east side of the tracks border NY Route 9, with low to medium density housing to the east of the highway and the station.

Within Dutchess County, the Rhinecliff–Kingston Amtrak Station, 15 miles north of the Poughkeepsie Station, lies adjacent to the east bank of the Hudson River and is characterized by residential uses and the historic hamlet of Rhinecliff on its eastern side, within the town of Rhinecliff. The New Hamburg Metro-North Railroad Station is located 10 miles to the south of the Poughkeepsie Station in the hamlet of New Hamburg. The hamlet is a small community located on the Hudson River in the southwest corner of the Town of Poughkeepsie.

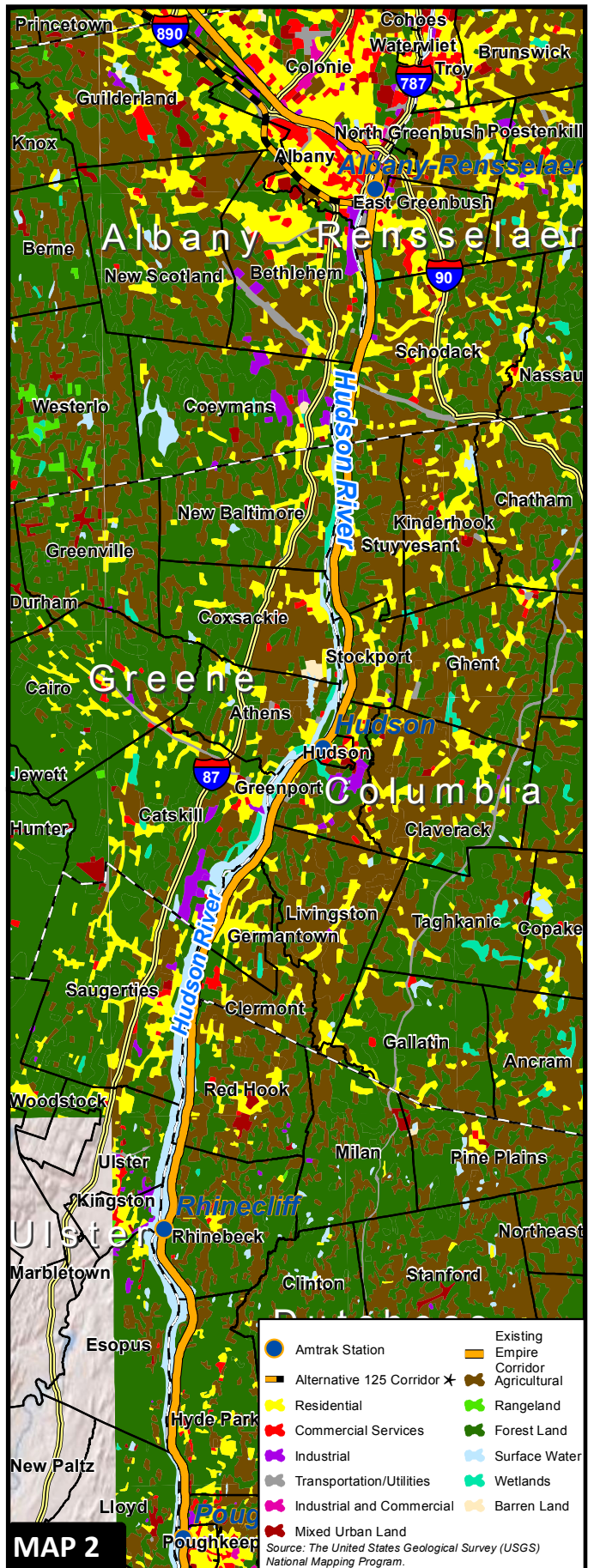
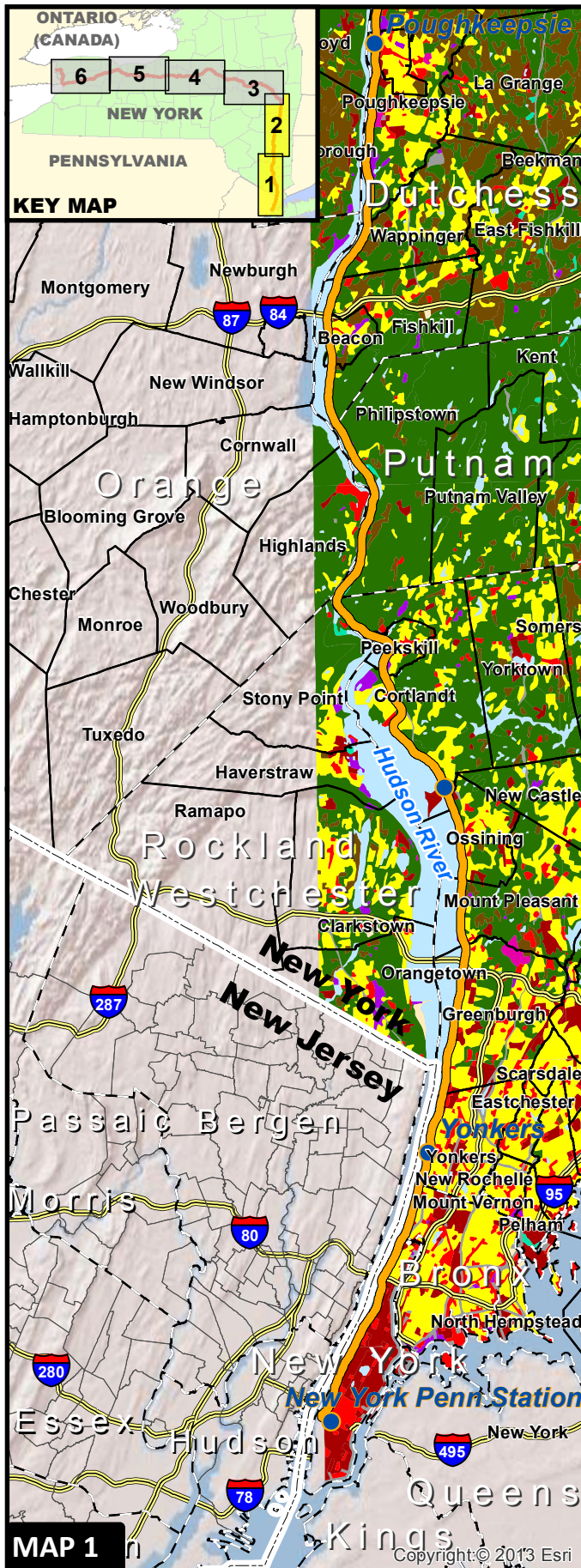
Columbia County is predominantly rural in nature within 300 feet of the railroad, which extends 29.5 miles through the county. The major land use classification is forested lands, which account for 50 percent of the study area. Nineteen percent (19%) of the corridor is developed, primarily residential and retail commercial uses, concentrated within the city of Hudson. Agricultural lands account for 19 percent of the study area.

In Columbia County, the land uses adjacent to the Hudson Station, 26 miles north of the Rhinecliff–Kingston Station, include a waterfront park and state boat ramp along the Hudson River on the west side of the track. To the east and south, the neighborhoods within the city of Hudson include the business district and residential properties. A non-profit theater (Stageworks) is located in close proximity to the station.

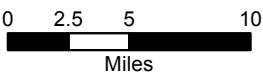
Rensselaer County (along with Albany and Schenectady counties along the Empire Corridor West program segment) is part of the Capital District Region. Rensselaer County is primarily rural or undeveloped within 300 feet of the existing (90/110 Study Area) rail corridor, which extends 13.4 miles through the county. In Rensselaer County, where the 125 Study Area would begin, it extends north to Albany–Rensselaer Station, doubles back on the Empire Corridor South for one mile, before turning east and crossing the Hudson River. The new 125 Study Area diverges from the existing railroad approximately 1.6 miles south of where the existing Empire Corridor West turns west (for a total of 13.5 rail miles in Rensselaer County).

In the southern part of Rensselaer County, the major land cover types are primarily forested and agricultural. Forestlands comprise 36 percent (90/110 Study Area) to 38 percent (125 Study Area) of the study area in the county. Agricultural lands comprise 28 percent (90/110 Study Area) to 30 percent (125 Study Area) of the county's land study area. The urban center of this county is the city of Rensselaer. The majority of the mix of urban uses including residential, commercial, industrial and transportation uses (30% for the 90/110 Study Area and 27% for the 125 Study Area) in the study area for the county are located within the city of Rensselaer.

Within Rensselaer County in the city of Rensselaer, the Albany–Rensselaer Station is situated about



* Alt. 125 as shown is a potential corridor used to analyze the potential operating characteristics, environmental impacts and cost for this speed (125 mph) threshold.

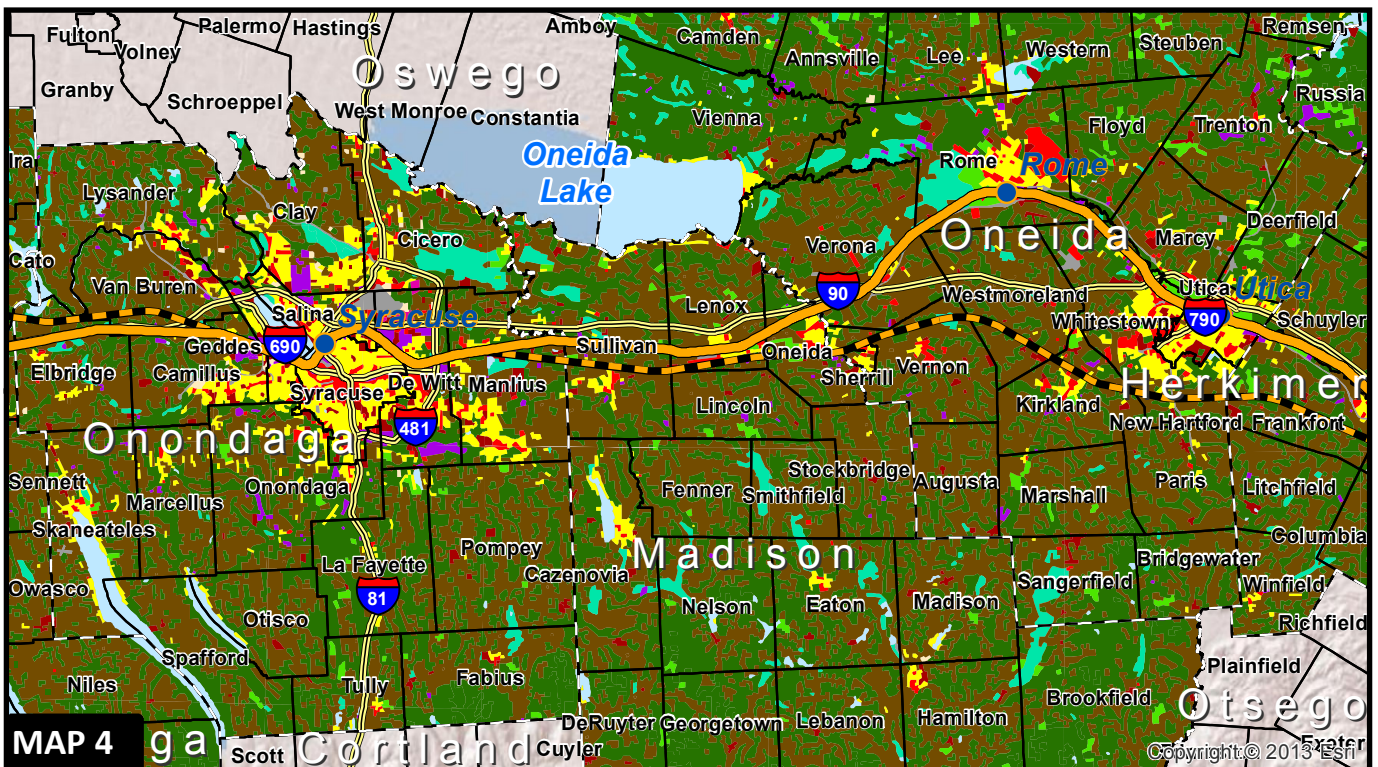
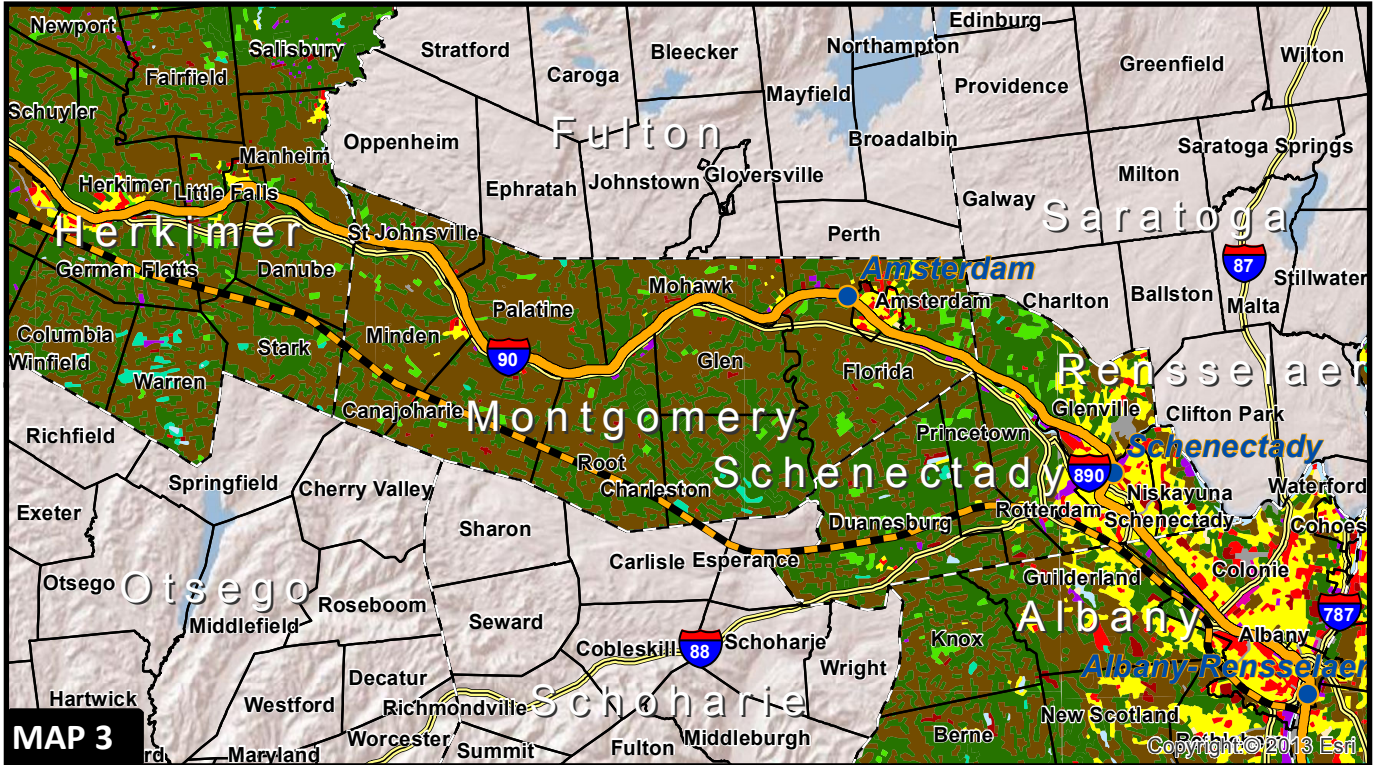
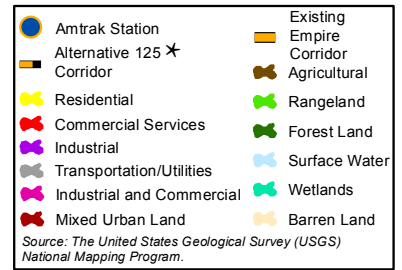
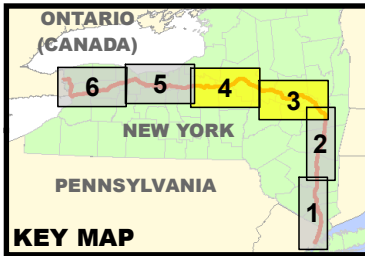


Land Cover Map

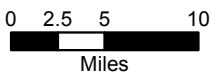
Exhibit G-1

Tier 1 EIS
High Speed Rail
Empire Corridor Program





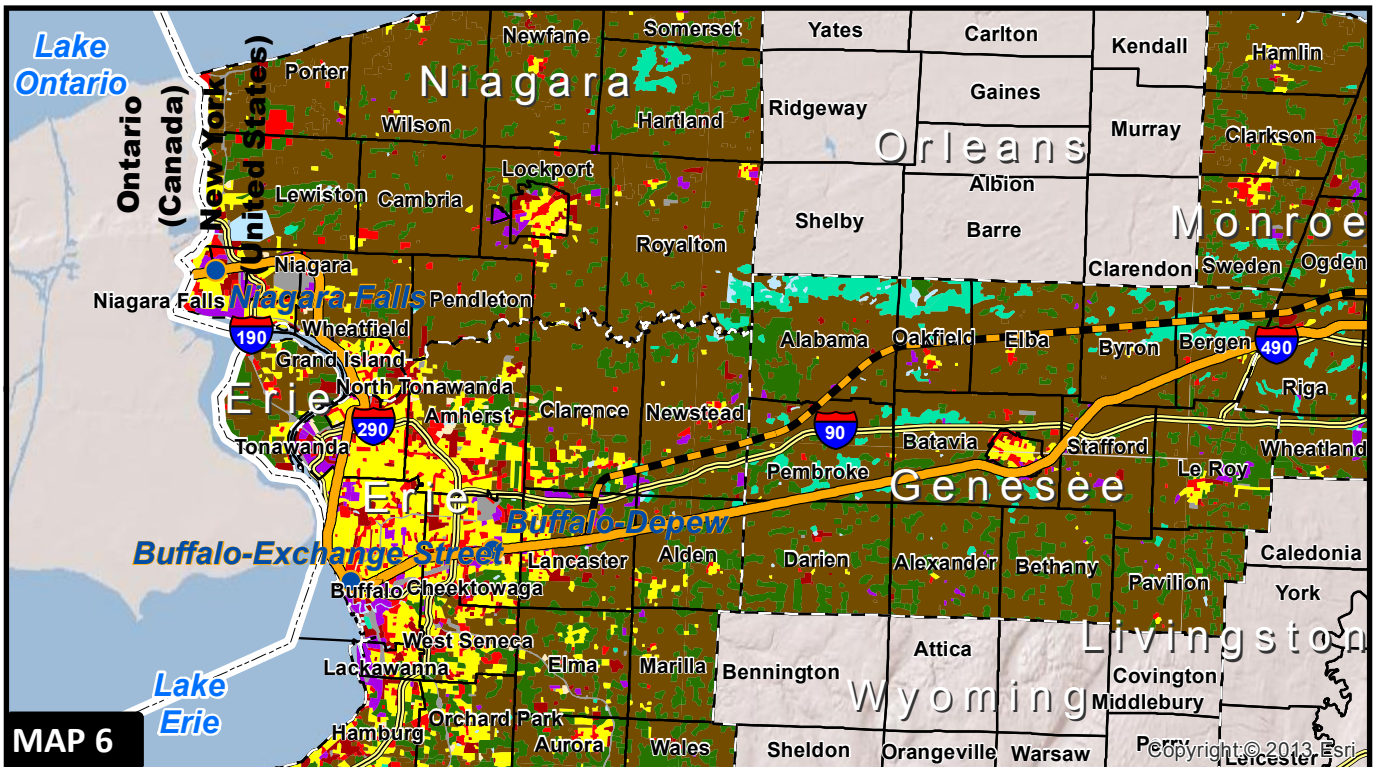
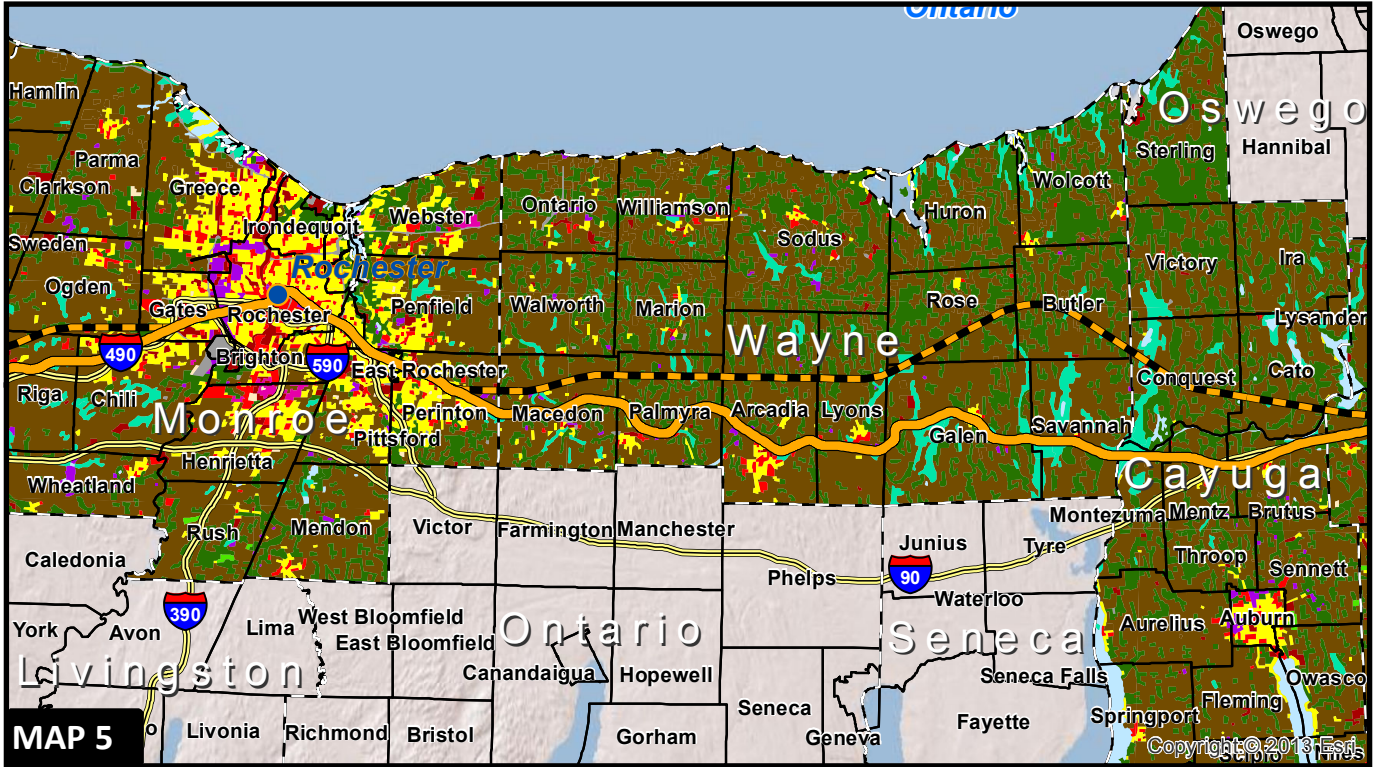
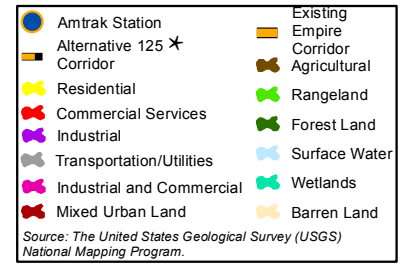
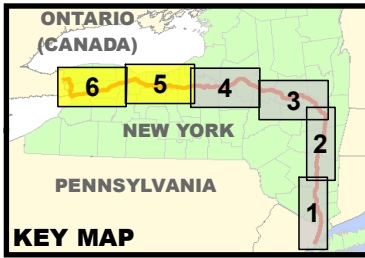
*Alt. 125 as shown is a potential corridor used to analyze the potential operating characteristics, environmental impacts and cost for this speed (125 mph) threshold.



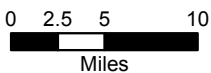
Land Cover Map
Exhibit G-1

Tier 1 EIS
High Speed Rail
Empire Corridor Program





* Alt. 125 as shown is a potential corridor used to analyze the potential operating characteristics, environmental impacts and cost for this speed (125 mph) threshold.



Land Cover Map
Exhibit G-1

Tier 1 EIS
High Speed Rail
Empire Corridor Program



1.5 miles south of downtown Albany. The land uses in the vicinity of the current station include several large surface parking facilities and medium-density detached single family housing located to the west and east of the station. Areas west of the train station also include commercial, institutional, and industrial uses, including New York State Adoptive Services, and several dining establishments.

1.1.2 Empire Corridor West/Niagara Branch: 90/110 Study Area

The 322-mile-long Empire Corridor West/Niagara Branch, with the exception of the metropolitan areas within and surrounding the major cities, has a rural agricultural character. The Empire Corridor West generally follows or parallels several major natural and man-made features, including the Mohawk River/New York Canal System and the New York State Thruway. The Niagara Branch turns north at Buffalo on Lake Erie, generally paralleling the Lake Erie shoreline and then extending north parallel to the Niagara River.

In Rensselaer, the railroad crosses over the Hudson River at the Livingston Avenue Bridge and enters Albany. The rail bridge crosses approximately one mile north of the Albany-Rensselaer Station. Within **Albany County**, the city of Albany is located on the west bank of the Hudson River approximately 150 miles north of New York City. Within the city limits of Albany, the land area along the corridor consists of primarily industrial and transportation/utility uses totaling 57 percent of the corridor. Commercial establishments, including warehouses and vehicle garages occupy an additional 20 percent of the corridor.

In Albany County, the land cover in the study area along the 11.8-mile-long corridor consists of a mix of mixed urban land, residential, commercial and industrial uses, comprising 47 percent of the total. The majority of these urban, developed areas are located in the city of Albany. The rail line then generally parallels the New York State Thruway (Interstate Route 90), passing south of the Albany International Airport. Transportation and utilities account for another 10 percent of study area land cover. Proceeding west beyond the Albany city limits, the land uses in the study area assume a more rural character with pockets of industrial uses (26%) with the remaining classified as undeveloped or forested areas (38%) to the west and south of Albany County.

Approximately 14.7 miles of the rail corridor extends through **Schenectady County**, where land cover in the study area is a mix of developed areas, agricultural lands and forested areas. Fifty-five percent (55%) of the corridor contains developed uses, predominantly residential, while another 43 percent consists of agricultural and forested areas.

Within Schenectady County, the city of Schenectady is approximately 15 miles northwest of Albany. A majority of the land use consists of residential neighborhoods accounting for 66 percent of the total along the corridor. Twenty-six (26%) percent of the corridor is occupied by industrial and commercial development.

Within Schenectady County, approximately 18 miles west of the Albany-Rensselaer Station, Schenectady Station is located in the heart of the downtown business district, surrounded by restaurants, theaters, and other commercial uses and services. The land uses surrounding the station consist of mixed urban uses, and the railroad crosses NY Route 5 immediately south of the station. Adjoining uses on Route 5 include the Empire State College of the State University of New York, a bank, and a U.S. Naval Reserve office.

In the remainder of Schenectady County north of the city of Schenectady, the railroad corridor crosses the Mohawk River and generally follows the river and, further to the southwest, the New York State Thruway (I-90), passing north of the Mohawk Valley Airport.

The railroad closely follows both the Erie Canal and the New York State Thruway (I-90) where it extends 40.3 miles through primarily rural areas of **Montgomery County**. The land cover types in Montgomery County are primarily forested, rangeland, or agricultural lands totaling 68% of the study corridor. Another 22 percent of the land area is classified as residential, commercial, or mixed urban lands, with much of this development centered on Amsterdam, the largest city along the railroad corridor in Montgomery County.

In Montgomery County, the Amsterdam Amtrak Station is located in the western outskirts of the city of Amsterdam, 18 miles west of Schenectady Station, on the north bank of the Mohawk River just south of Route 5/Route 67. A mixed residential and commercial neighborhood surrounds the station, and includes several medical offices, St. Mary's Hospital, a church, and other services.

The railroad extends 25.3 miles through rural areas of **Herkimer County**. The railroad follows the Mohawk River and the New York State Thruway (to the south of the river) on the eastern half of Herkimer County, and, west of Herkimer, follows the Erie Canal and the New York State Thruway (to the north of the canal). Surface waters account for 7 percent of total land area. The major land use types include agricultural lands and rangeland (40%) and forested areas (29%), totaling 69 percent of the corridor. The developed lands, principally residential and commercial land uses, are clustered in the communities of Little Falls and Herkimer.

Proceeding west, the Empire Corridor extends 28.6 miles through **Oneida County**, paralleling the Erie Canal between Utica and Rome. Wetlands account for 16 percent of the land cover. The railroad also parallels portions of the New York State Thruway (I-90) and sections of NY Routes 69, 26, and 365, and transportation accounts for 10 percent of the land cover. The county is primarily rural; agricultural lands, rangeland, and forest constitute 59 percent of the land cover in the 600-foot-wide study area. Residential, commercial, and industrial land use accounts for 15 percent of the land cover in the study area and is clustered around the urbanized portions of Utica and Rome.

Within Oneida County, the study area in the city of Utica consists primarily of transportation/utilities (48%) and commercial and industrial development (43%) totaling 91 percent. The Utica Boehlert Transportation Center, located 60 miles west of Amsterdam Station, is surrounded on the west, south, and east by commercial and industrial uses, with a few government buildings. The station adjoins the Children's Museum of History and Science on the west. The northwest side of the station adjoins the Genesee Street overpass, and industrial areas are north of the railroad tracks.

Within Oneida County, the Amtrak Rome Station is located 13 miles west of the Boehlert Transportation Center at Union Station (Utica Station), immediately south of the Erie Canal. The area around and south of the station includes commercial services and sparsely developed, agricultural areas. The station is immediately east of a bridge carrying NY Routes 26, 49, and 69 over the canal and railroad. To the north of the canal are more densely developed, industrialized areas of Rome, including the Rome Industrial Park.

The Central New York Region encompasses the counties of Madison, Cayuga, and Onondaga. The railroad extends 13.8 miles through rural Madison County, generally paralleling the Old Erie Canal and the New York State Thruway (I-90). A majority of the land cover is rural in nature, with 91

percent of the study corridor classified as forest (50%), agricultural (26%), rangeland (11%), or wetlands or barren land (5%). A small percentage of the study area in the county (7%) consists of residential or commercial use. The railroad passes five miles south of Oneida Lake in Oswego County, part of the Finger Lakes.

The Finger Lakes Region is a regional tourism destination centered on the chain of lakes that includes two that are among the deepest in America (Cayuga and Seneca Lakes), includes the study area counties of Onondaga, Cayuga, Wayne, and Monroe. The cities of Syracuse (Onondaga County) and Rochester (Monroe County) are major centers for employment, commerce and culture within this four-county region of New York State.

The railroad extends 31.3 miles through **Onondaga County**, roughly paralleling the New York State Thruway to the south and passing south of the Syracuse Hancock International Airport and Onondaga Lake in the city of Syracuse. Roughly half of the land cover in the study area in the county consists of forestland (25%), agricultural (15%), wetlands (75%), and surface water or barren land (3%). Built-up lands, consisting of industrial (15%), transportation/utilities (13%), mixed urban land (13%), and commercial/residential (10%), are largely situated within the city of Syracuse, with small pockets on the communities of Minoa on the east and Jordan on the west.

Within Onondaga County, most of the study area in the city of Syracuse is built up (94%), with only 6 percent consisting of surface waters. Mixed urban uses accounts for 63 percent of the land cover, followed by transportation/utilities (18%), industrial (10%), and commercial (3%).

In Syracuse, Amtrak serves the William F. Walsh Regional Transportation Center, which opened in 1999, and is located 41 miles west of the Rome Station. The station occupies the area on the west side of the grade-separated interchange of I-81 and NY Routes 370 and 298 at the southeast corner of Onondaga Lake. A regional shopping center (Carousel Mall) is southwest of the interchange and other retail, commercial, and industrial uses are south and east of the station. The northeast side includes MacArthur Stadium and areas to the north, on the opposite side of the tracks, include the ITT Technical Institute and residential neighborhoods. Wetlands, undeveloped/barren land, and commercial/industrial uses occupy the areas north of tracks and Ley Creek, which closely borders the northwest side of the tracks. West of the station and the I-81 Interchange area, the Onondaga Lake County Park is located along the lake shoreline.

West of the William F. Walsh Regional Transportation Center (Syracuse Station), the railroad passes close by the State Fairgrounds, on the north, and Camillus Airport, on the north, and extends through largely rural agricultural areas.

The railroad extends 11.5 miles through rural **Cayuga County**, which consists primarily of agricultural lands (77%), forestland (13%), and wetlands and surface waters (8%) in the study area. The railroad closely follows and parallels, to the south, the New York State Thruway (I-90) through the eastern half of the county, passing south of Whitford Airport in Weedsport, and crosses the Cayuga-Seneca Canal at the west end of the county. At the west end of the county, the railroad borders the Northern Montezuma Wetlands State Wildlife Management Area (WMA) and the Howland Island WMA.

The railroad extends 37.1 miles through rural **Wayne County**, which is 97 percent undeveloped in the study area, paralleling portions of the Erie Canal and NY Route 31. The land cover in the study area consists predominantly of agricultural land (61%), forestland (24%), wetlands (11%), and barren land (1%). The railroad crosses through the Northern Montezuma WMA and the Montezuma

National Wildlife Refuge.

The railroad extends 30.9 miles through **Monroe County**, closely paralleling the Erie Canal and Route 31F on the easternmost part, then roughly paralleling I-490 around Rochester and continuing west through the county. This is reflected in land cover totals for the study area, with 4 percent wetlands and 6 percent transportation/utilities. The predominant land use in the study area in Monroe County is agricultural (37%), with 6 percent forested lands. The built-up areas (44%) are centered on Rochester and the outlying communities of East Rochester, Fairport, and Gates. Developed areas in the study area consist of commercial and industrial uses (27%), residential uses (10%), and mixed urban land (7%). The railroad in Rochester extends within roughly five miles of Lake Ontario and within two miles of Irondequoit Bay on the lake. West of the city center of Rochester, the railroad passes north of the Greater Rochester International Airport, with access provided off I-390.

Within Monroe County, the city of Rochester in the study area is largely built up, with 79 percent consisting of industrial (44%), commercial (34%), and mixed urban land. Transportation/utilities accounts for 21 percent of land cover within 300 feet of the centerline of the railroad.

The Amtrak Rochester Station, located 79 miles east of the Syracuse Regional Transportation Center, is situated in the heart of the downtown area, just east of the I-490 Inner Loop crossing over the Genesee River. Access to the station from I-490 is provided by North Clinton Avenue. A new multimodal transit center is planned by the City of Rochester and Amtrak. The area south of the station and between the railroad tracks and the Inner Loop is heavily industrialized, with commercial uses, restaurants, heavy industry, and government uses (Judicial Process Commission). Directly north of the station, on the opposite side of the railroad tracks, are residential neighborhoods that are flanked by heavy industry and businesses on both the west/river side and the east, with a school within a half-mile northeast of the station.

The railroad extends 30 miles through rural **Genesee County**, closely following and paralleling NY Route 33, which generally parallels the New York State Thruway (I-90). The study area is predominantly agricultural, which comprise 84 percent of the land cover, with forest, wetlands, and surface waters comprising 8 percent. Developed lands comprise 9 percent of the study area in the county, including residential (5%), mixed urban uses (2%), and industrial and commercial uses. The built-up areas are clustered in the city of Batavia, at the geographic center of the county where many of the major highways converge, and the railroad extends south of the Genesee County Airport.

The Buffalo-Niagara region includes the counties of Erie (and the city of Buffalo) and Niagara (and the city of Niagara Falls). The railroad extends 32.7 miles through **Erie County**. The eastern segment follows NY Route 33, then NY Route 130 to the city of Buffalo, a distance of 20 miles. The railroad alignment turns north to follow the Lake Erie shoreline and then follows Route 265 north, roughly parallel to the Niagara River, a distance of 12.7 miles. The eastern 10 miles of the study area is predominantly undeveloped (33%), comprised of agricultural lands (27%) and forest (6%). The remainder of the study area in the county is primarily developed (65%) coinciding with development in and surrounding the village of Depew and town of Cheektowaga on the eastern outskirts of Buffalo, the city of Buffalo, and, to the north, Tonawanda near the Niagara County border.

Within Erie County, the city of Buffalo is entirely urbanized within the study area, with 53 percent industrial uses, 24 percent commercial services, and 16 percent transportation/utilities. Two stations in Buffalo provide Amtrak service, the Buffalo-Depew Station, on the eastern outskirts of Buffalo, 61 miles west of the Rochester station, and the Buffalo-Exchange Street Station, 6 miles further west in downtown Buffalo.

Within Erie County, the Buffalo-Depew Station is located in the village of Depew, which is east of the town of Cheektowaga, the second largest suburb of Buffalo. The station is situated in a warehouse/industrial area located between Walden Avenue and Broadway (NY Route 130), which parallels the railroad, just west of Dick Road. The area immediately to the east consists of landlocked undeveloped land and wetlands between two railroad lines. Areas surrounding the station and tracks are industrial and commercial, with a variety of services and large businesses and warehouses in this industrialized zone. North and east of the industrial zone are residential neighborhoods along and adjoining Scajaquada Creek, which parallels the railroad. South of NY Route 130 is undeveloped lands and wetlands along Cayuga Creek, and a large gravel pit/mining operation is located to the southwest. The station is approximately 1 ½ miles south of the Buffalo-Niagara International Airport, with access from the station provided by Dick Road.

Within Erie County, the Buffalo-Exchange Street Station is located in the heart of downtown Buffalo, within the northwest quadrant of the I-190/NY Route 16 Interchange, which is directly east of the I-190/NY Route 5 Interchange. The station is situated south of Exchange Street adjoining the interchange ramps, and is directly south of a parking garage and the Coca Cola Field baseball stadium. To the northwest are the One HSBC Center, the Canadian Consulate and the Buffalo-Niagara Visitor Center. Immediately south of I-190 and the station are offices for the Associated Press and a Disability Benefits office, and the two blocks to the south are occupied by parking lots and the HSBC Arena and Ira G. Ross Aerospace Museum. To the east, on the opposite side of two sets of ramps for NY Route 16 and Carroll Street/Center Street/Elm Street are businesses, government offices, and the Buffalo Transportation Museum. To the west are the site of the former Buffalo Memorial Auditorium and elevated ramps for the I-190/NY Route 5 Interchange. On the other side of this interchange and south of the HSBC Arena is the Buffalo River waterfront, which outlets into Lake Erie to the northwest.

The railroad extends 14.4 miles through **Niagara County**, to the north of Erie County. The railroad follows the shoreline of the Niagara River, then extends north towards the Niagara Falls International Airport and turns west north of the airport to the western terminus of the Empire Corridor at Niagara Falls. Approximately half of the land cover in the study area is undeveloped, with agricultural uses and undeveloped land (50%) predominating in the stretch between the city of North Tonawanda, on the south end of the county, and the city of Niagara Falls on the northwest. Remaining land uses that predominate in the two cities on either end of the county consist of commercial and industrial uses (19%), residential development (12%), transportation/utilities (11%), and mixed urban land (9%).

Within Niagara County, the Amtrak Niagara Falls International Railway Station and Intermodal Transportation Center (Niagara Falls Station) is located 26 miles north of the Buffalo-Exchange Street Station at the northern terminus of the railroad on the east side of the Canadian border at the Niagara River. The station extends between NY Route 104 and Whirlpool Street, which bracket a primarily industrial and commercial zone surrounding the station, with residential and mixed uses predominating east of NY Route 104 and south and north of the station. Adjoining uses surrounding the station include automotive uses, retail uses, and apartment buildings.

1.1.3 Empire Corridor West/Niagara Branch: 125 Study Area

The 125 Study Area, extending 308 miles from the Rensselaer County line to Niagara Falls, takes a more direct route than Empire Corridor West through rural and agricultural areas between Rensselaer County and Buffalo. The 125 Study Area bypasses several of the major metropolitan areas

and existing stations along the Empire Corridor West, with the exception of two 16-mile sections roughly centered on the Syracuse and Rochester metropolitan areas.

The 125 Study Area bypasses the existing corridor over a distance of 126 miles between Rensselaer County and a point 8.5 miles east of the Syracuse Station. The 125 Study Area extends south of the existing corridor (by approximately 1.6 miles on the existing railroad along the Hudson River up to 14 miles at Amsterdam Station) to bypass the cities and Amtrak Stations in Schenectady, Amsterdam, Utica, and Rome. West of the Syracuse area, the 125 Study Area bypasses, and extends up to 7.5 miles north of, the Empire Corridor West over a distance of 62 miles, before merging again with the existing rail corridor east of Rochester. West of Rochester, the 125 Study Area bypasses, and extends up to 7 miles north of, the existing corridor over a distance of 51 miles, before rejoining the existing rail corridor at a point 5 miles east of Buffalo-Depew Station in Buffalo.

Within the study area in **Albany County**, the city of Albany, along the west bank of the Hudson River, is primarily urban. The 125 Study Area crosses the Hudson River to closely parallel I-787 and, further west, I-87 (New York State Thruway), in the interchange area, continuing west along the median of the New York State Thruway (I-87/I-90) through the city. This is reflected in the transportation/utility uses totals for the city's land cover, which accounts for 55 percent of the 600-foot study area. The remainder of the study area consists of residential, commercial, and industrial uses (23%), and forestland, barren land, and surface water (21%). On the western end of the city and continuing west of the city, the New York State Thruway and rail corridor adjoin the Albany Pine Bush Preserve, a state unique area.

The 125 Study Area extends through 14 miles of Albany County, continuing to follow the median of the New York State Thruway (I-87/I-90) through the remainder of the county. This is reflected in the predominance of transportation/utilities (66%) within the 600-foot-wide study area. The remainder of the study area in the county consists of 18 percent undeveloped areas (forest, agricultural, barren land, or water), and 16 percent developed areas, of which residential accounts for 10 percent.

The 125 Study Area extends a total distance of 17 miles through **Schenectady County**, bypassing the city of Schenectady and the existing Schenectady Station, located 3.3 miles to the north. The 125 Study Area continues along the New York State Thruway (I-90) a distance of approximately 4 miles into Schenectady County to the junction with I-88. This portion of the corridor accounts for the transportation utilities (10%), residential (7%), and commercial (4%) totals in the county. The majority of land cover in the county consists primarily of agricultural lands (51%) and forestlands/rangeland (28%), which accounts for land cover along the remainder of the corridor. The 125 Study Area passes north of the Duaneburg Airport, then closely parallels U.S. Route 20 along the western 5 miles of the county.

The 125 Study Area extends 6.5 miles through **Schoharie County**, closely paralleling U.S. Route 20 through the eastern half. The 600-foot-wide study area in the county is primarily agricultural (47%) or forestland (41%), with mixed urban uses (12%) located in Esperance and Sloansville.

The 125 Study Area extends 21.3 miles through the southern portion of **Montgomery County**, through predominantly agricultural (71%) and forested (25%) lands. The remaining 4 percent of the county land cover within 300 feet consists of wetlands. The 125 Study Area bypasses the city of Amsterdam and Amtrak Amsterdam Station, located approximately 15 miles to the northeast.

The 125 Study Area extends 25.3 miles through the southern portion of **Herkimer County**, roughly

paralleling Route 168 on the eastern half of the county and extending north of the Frankfort-Highland Airport on the west end of the county. The study area in Herkimer County is predominantly undeveloped (97%), consisting largely of forestland (52%) and farmland or rangeland (45%). Mixed urban/residential land comprises only 3 percent of the study area. This corridor largely bypasses development centered along the existing railroad, including the communities of Herkimer and Little Falls.

The 125 Study Area extends 22 miles through **Oneida County**, extending approximately 4 miles south of the Utica Station and 7 miles south of the Rome Station. The study area is predominantly rural (94%), consisting of agricultural (58%), forestland (31%), and wetlands (6%). Mixed use and residential uses comprise 6 percent of the total land cover.

The 125 Study Area extends 14.6 miles through **Madison County**, paralleling the existing rail corridor to the south. The corridor parallels Route 5 to the south through the eastern 2/3 of the county. The study area consists predominantly of agricultural lands (64%), with forestland, rangeland, and barren land comprising 29 percent. Mixed urban land, residential, and commercial uses comprise only 5 percent of the land cover in the study area.

The 125 Study Area extends a distance of 31.6 miles through **Onondaga County**, merging back with the existing railroad corridor over a distance of approximately 16 miles around the Syracuse Station. The 125 Study Area extends approximately 4½ miles west on new alignment until it meets the existing Empire Corridor West, then follows the existing railroad approximately 9¼ miles to the Amtrak Syracuse Station at the northernmost city limit. West of the station, the 125 Study Area follows the existing railroad over a distance of 6.4 miles through the Syracuse area, before diverging at the Camillus Airport to the north of the existing railroad.

Onondaga County study area includes agricultural lands (26%) and forestlands (26%), and other undeveloped areas (10%), such as wetlands, barren land, and water, located largely on the eastern and western ends of the county outside Syracuse. The Syracuse study area includes much of the developed areas (38%) in the county, including industrial (11%), transportation/utilities (10%), mixed urban (10%), commercial (5%), and residential (2%). The study area within the city of Syracuse includes 6 percent mixed urban land, 18 percent transportation/utilities, and 13 percent industrial/commercial. The existing rail corridor adjoins the southern edge of Onondaga Lake and its adjoining county park and the State Fairgrounds. Surface waters account for 6 percent of the study area in the city.

The 125 Study Area extends through **Cayuga County** over a distance of 11 miles, on a route north of the existing rail corridor that is largely undeveloped. The predominant land cover in the study area is agriculture (72%), with forestland (18%), wetlands (7%), and surface waters (1%) comprising 26 percent. Transportation/utilities accounts for 1 percent of the land cover.

The 125 Study Area extends 35.5 miles through **Wayne County**, through areas that are predominantly rural. Agricultural uses comprise 66 percent of the 600-foot-wide study area, followed by forestland (23%), and wetlands (8%). The 125 Study Area extends within a half-mile north of the Montezuma National Wildlife Refuge. Developed land (mixed urban, residential, commercial, and industrial uses) comprises only 4 percent of the total study area.

In **Monroe County**, the 125 Study Area merges with the Empire Corridor West approximately three miles west of the county line in Fairport. The 125 Study Area follows the existing railroad corridor approximately 10¼ miles to the Amtrak Rochester Station, extending north of the Greater

Rochester International Airport, then diverges to the north approximately 5.7 miles west of the station. The 125 Study Area extends north of the Churchville County Park at the western county line. Agricultural uses (44%), forestland (11%), wetlands (3%), and barren land (1%) in the study area are located primarily outside the Rochester city limits. Residential uses and transportation/utilities, and mixed urban land account for 22 percent of the study area. The majority of commercial and industrial development, which comprises 20 percent of the study area, is centered on Rochester. Within the city limits, land uses in the study area consist of industrial development (39%), commercial services (30%), transportation/utilities (19%), residential (12%), and mixed urban uses (1%).

The 125 Study Area extends 29.7 miles through **Genesee County**. The corridor extends north of the Genesee County Airport in the center of the county, turning to the southwest to parallel the New York State Thruway (I-90) on the west end of the county, extending within one mile south of the Tonawanda Indian Reservation. Genesee County is predominantly rural (96%) in the study area, with 84 percent agricultural, 6 percent wetlands, 5 percent forestland, and only 5 percent residential, mixed urban, and industrial uses.

In Erie County, the 125 Study Area extends approximately 11½ miles before merging back with the Empire Corridor West, 4.6 miles east of the Buffalo-Depew Station. The 35.3 miles of the 125 Study Area in Erie County is predominantly urban, with the exception of the segment on the new alignment. This eastern segment accounts for the majority of the agricultural (37%) and forestland (9%) along the 125 Study Area in the county. Development within the village of Depew, Cheektowaga on the eastern outskirts of Buffalo, the city of Buffalo, and, to the north, Tonawanda near the Niagara County border accounts for the majority of development (47%) within the study area in the county, consisting of industrial (17%), residential (14%), commercial (10%), and mixed urban/transportation (7%). Barren land, wetlands, and surface waters comprise 5 percent of the study area. Within the city of Buffalo, land cover in the study area is entirely built out, consisting of industrial development (37%), residential (30%), commercial (17%), transportation/utilities (11%), and mixed urban (5%).

The 125 Study Area follows the Niagara Branch 14.4 miles through Niagara County, where land uses in the city of North Tonawanda on the south end and the city of Niagara Falls on the northwest are predominantly developed. Commercial and industrial uses account for 19 percent of the study area, followed by residential uses (12%), transportation/utilities (11%), and mixed urban land (9%). The undeveloped areas of the study area are located primarily between the two cities and consist of agricultural (46%) and barren land (4%).

Exhibit G-2—Consistency Evaluation under the New York State Smart Growth Infrastructure Policy

Criterion A: To advance projects for the use, maintenance or improvement of existing infrastructure.
Consistent. The purpose of the High Speed Rail Empire Corridor program is to introduce higher passenger train speeds on the existing rail corridor from New York City to Buffalo/Niagara Falls and provide improvements in travel time, frequency, and reliability. The program includes projects to improve existing infrastructure in addition to building new tracks, crossovers, and stations, among other improvements.
Criterion B: To advance projects located in municipal centers.
Consistent. Projects under this program are located in multiple municipal centers, including New York's six largest metropolitan areas (New York City, Buffalo, Rochester, Yonkers, Syracuse, and Albany).

Exhibit G-2—Consistency Evaluation under the New York State Smart Growth Infrastructure Policy

Criterion C: To advance projects in developed areas or areas designated for concentrated infill development in a municipally approved comprehensive land use plan, local waterfront revitalization plan and/or brownfield opportunity area plan.
Consistent. The program reviewed regional and local master plans for communities along the Empire Corridor and found that most of them explicitly endorse the implementation of improvements to intercity transit and support the concentration of development along transportation corridors.
Criterion D: To protect, preserve and enhance the state's resources, including agricultural land, forests, surface and groundwater, air quality, recreation and open space, scenic areas, and significant historic and archeological resources.
Consistent. The long-term benefits of removing vehicles from the road by providing improved public transit options will lead to a <i>net positive impact on energy and greenhouse gas emissions</i> . The Preferred Alternative, Alternative 90B, would result in an annual reduction of approximately 391,000 Btu and approximately 33,000 metric tons of CO _{2e} over the Base Alternative. Impacts to the state's resources would be minimal as the Preferred Alternative largely involves work within the existing right-of-way. NYSDOT will assess specific impacts on the above resources in more detail during the Tier 2 assessment as the program design is refined, and work to avoid and minimize impacts as much as practicable. In the Tier 2 analysis, NYSDOT will develop <i>appropriate mitigation measures through restoration, enhancement and/or preservation of these resources</i> in coordination with the appropriate agency and/or landowner.
Criterion E: To foster mixed land uses and compact development, downtown revitalization, brownfield redevelopment, the enhancement of beauty in public spaces, the diversity and affordability of housing in proximity to places of employment, recreation and commercial development and the integration of all income and age groups.
Consistent. Secondary mixed-use development may be fostered near capital improvements to stations, particularly in the instance of a station relocation/new station building, such as the Schenectady, Rochester, Niagara Falls, Amsterdam and Buffalo-Depew stations. Site selection for station relocation focused particularly on <i>economic benefits to a downtown business district</i> . New station buildings also have the potential to contribute to the enhancement of beauty in public spaces by creating distinct architectural landmarks in a city. The proposed improvements to the Empire Corridor will make rail travel a more viable commuting option for workers and <i>NYSDOT will look to maximize opportunities for Transit-Oriented Development (TOD) as part of future station projects</i> , thus fostering a diversity of housing options in proximity to places of employment. Each of the Metropolitan Planning Organizations (MPOs) and cities that will be impacted by the program support rail improvements as a catalyst for TOD and mixed-use development along transit corridors.
Criterion F: To provide mobility through transportation choices including improved public transportation and reduced automobile dependency.
Consistent. The purpose of this program is to improve rail service along the Empire Corridor between New York City and Buffalo/Niagara Falls, and the program's performance objectives relate directly to improving transportation options and access. These include <i>improving system-wide on time performance; reducing travel time</i> along all segments; <i>increasing the frequency of service</i> along Empire Corridor West; attracting additional passengers; reducing automobile trips and highway congestion; and <i>minimizing interference with freight rail operations</i> . All the evaluated alternatives will expand public transit availability along the corridor, <i>providing regional travel benefits</i> by increasing transportation choices and reducing automobile dependency.
Criterion G: To coordinate between state and local government and intermunicipal and regional planning.
Consistent. <i>A review of local, county, and state comprehensive plans and long-range transportation plans show that many of them indicate explicit support for the high speed rail improvements proposed for the Empire Corridor.</i> NYSDOT and FRA invited 37 NEPA cooperating and/or participating agencies to provide input throughout the duration of the program. NYSDOT also formed the Empire Project Advisory Committee (EPAC) with representatives from key agencies, statewide government organizations, major railroads, metropolitan planning organizations and other key stakeholders to help shape and guide decision-making throughout the environmental review process.
Criterion H: To participate in community-based planning and collaboration on the project.
Consistent. NYSDOT developed and has implemented a multifaceted Public Involvement Plan to engage and inform the public, key stakeholders, and government agencies at key milestones throughout the planning process. As part of this plan, NYSDOT has developed a stakeholder database media outreach plan, program website, and three informational newsletters to share updates and promote attendance at public meetings. NYSDOT has held six public scoping meetings to date in the major population centers along the corridor (New

Exhibit G-2—Consistency Evaluation under the New York State Smart Growth Infrastructure Policy

York City, Albany, Syracuse, Rochester, Buffalo, and Utica), and posted briefings of the meetings online for those unable to attend. Comments on the Tier 1 Draft EIS were solicited by holding six public hearings held in Albany, Syracuse, Buffalo, Rochester, Utica, and Poughkeepsie and by eliciting comments through the program website.

Criterion I: To ensure predictability in building and land use codes.

Not applicable.

Criterion J: To promote sustainability by strengthening existing and creating new communities which reduce greenhouse gas emissions and do not compromise the needs of future generations, by among other means encouraging broad based public involvement in developing and implementing a community plan and ensuring the governance structure is adequate to sustain and implement.

Consistent. This program would strengthen existing communities by providing additional commuting and other travel options for residents and workers. Improving transportation access could increase both the number of jobs available to residents within the corridor as well as the ability of workers to access work locations. Providing options for travelers and connecting major metropolitan areas will improve the quality of life for Empire Corridor residents and workers. One of the main goals of the program is to improve environmental quality by facilitating rail use and reducing reliance on automobile travel, thereby reducing fuel use and greenhouse gas (GHG) emissions. This program is not only projected to increase passenger ridership but also to facilitate freight rail use and future growth in rail. For each one percent increase in long-haul freight that changes from truck to rail, fuel savings would be approximately 111 million gallons per year and annual GHG emissions would fall by 1.2 million tons.

Exhibit G-3—Consistency Summary of State and County Master Plans

Master Plans	Rail Transportation Objective
State Plans	
New York State Rail Plan – Strategies for a New Age (2009), New York State Department of Transportation (NYSDOT)	This Statewide Plan <i>recommends the development of High Speed Rail and infrastructure improvements to the Empire Corridor</i> from NYC Penn Station to its terminus at Niagara Falls Station. The overall objectives are to improve efficiency, lower service costs for the commuter, provide enhanced intercity passenger service and improve freight rail operations.
Multimodal Transportation Program Submission: 2009-2014 (March 2008), New York State Department of Transportation (NYSDOT)	This program <i>identified actions needed to improve rail service along each of its corridors including; service frequency, and improved on-time performance along its rail corridors.</i>
NY State's Transportation Master Plan for 2030 (2006), NYSDOT	The plan states that: " <i>Intercity rail passenger ridership along the Empire Corridor (New York City-Albany Buffalo) where 90 percent of the State's intercity rail ridership is concentrated, has increased almost 26% since 1995 with annual boardings totaling 1.2 million in 2003. Intercity passenger rail service has long been an important component of New York State's transportation system and the State will continue to work with Federal officials to help address this essential service.</i> " The plan asserts that future transportation investments shall <i>respond to demographic, economic and travel trends, prioritize environmental sustainability, reliability, and safety</i> , while focusing <i>on the State's most critical multimodal corridors.</i>

Exhibit G-3—Consistency Summary of State and County Master Plans

Master Plans	Rail Transportation Objective
New York State Transportation Plan - Five Year Project List (FY 2015/16 through 2019-2020) (2016), NYSDOT	The plan states that NYSDOT agreed that \$130 million in new capital investments would be provided from 2015-2016 through the 2019-2020 plan period for passenger and freight rail. This plan allocates matching funds for improvement projects funded by FRA. Remaining funds will be allocated based on statewide solicitation of projects that are eligible and feasible, and consistent with the State Rail Plan (SRP), that include public outreach and stakeholder involvement, have a positive cost/benefit ratio and that demonstrate the ability to leverage non-State investment.
Metropolitan Planning Organization/County Plans	
New York and Bronx Counties 2010 - 2035 NYMTC Regional Transportation Plan – A Shared Vision for a Shared Future (2009) Regional Transportation Plan: Plan 2045 Maintaining the Vision for a Sustainable Region (2017) New York Metropolitan Transportation Council (NYMTC)	NYMTC <i>supports upgrading intercity rail service along the Empire Corridor</i> as part of its Strategic Regional Investment Options as noted in the Plan 2035. Plan 2045 lists completing planning of the <i>Empire Corridor intercity passenger rail improvements</i> as a near-term action and recommended major improvement that will improve the regional economy. The RTP supports and encourages the use of TOD development near existing and planned transit stations and hubs.
Westchester County Westchester 2025/Plan Together: a partnership for Westchester’s future (May 2008, amended January 2010)	This policy plan <i>endorses increases in opportunities for transit service and regional mobility</i> . No specific mention of HSR.
Putnam County Vision 2010: Guiding Putnam into the Next Decade, Putnam County Division of Planning and Development, Vision 2010 Steering Committee (August 2003)	The plan <i>supported to continue to work with Metro-North to improve service and expand ridership along the Hudson Line</i> . No mention of HSR. The plan also recommended continued participation in the New York Metropolitan Transportation Council (NYMTC).
Dutchess County Moving Dutchess 2: 2016 Metropolitan Transportation Plan (Adopted March 24, 2016) Prepared by the Poughkeepsie- Dutchess County Transportation Council	One of the Plan’s goals is to maintain the transit system in a state of good repair and increase ridership to reduce traffic and promote sustainable development. The Plan recommends improving multimodal connectivity to transit services, including commuter rail. Focus new development in existing growth centers and along major transit corridors.
Columbia County City of Hudson Comprehensive Plan: Diversity Through Balance (April 2002)	One of the goals of the Plan is to <i>improve and strengthen gateways to the City. One of these is to improve access and use of the existing Amtrak Station in Hudson</i> .

Exhibit G-3—Consistency Summary of State and County Master Plans

Master Plans	Rail Transportation Objective
Albany – Rensselaer Counties 2050: New Visions for a Quality Region, (2020) adopted September 3, 2020 Comprehensive Economic Development Strategy for the Capital District: 2018-2022 (adopted January 17, 2018) prepared by Capital District Regional Planning Commission (September 2009)	<p>The Plan recommends investment in high speed rail as part of the goal of improving regional transit and providing essential mobility for all.</p> <p>The Plan calls for <i>encouraging development along major transit corridors</i>.</p> <p>The Strategy calls for improvements to existing public utilities and facilities, including rail as a cost-effective way to bolster economic growth.</p> <p>The Strategy also supports efforts that <i>maximize the potential of the Region as the major transportation and distribution center in the Northeast</i>.</p>
Schenectady County Refer to discussion above under Albany-Rensselaer.	<p>The Capital District Transportation Authority (CDTA) rebuilt the Schenectady Station in 2018 on the site of the former station. This new station would serve Amtrak and local transit service.</p>
Montgomery County City of Amsterdam Comprehensive Plan, Prepared by Saratoga Associates and the Montgomery County Department of Planning and Development (2003)	<p>The County is currently preparing a Comprehensive Plan that will emphasize Smart Growth and Transit-Oriented Design for new developments. Although Montgomery County has not yet finalized a Comprehensive Plan, the City of Amsterdam has developed a Comprehensive Plan. Amsterdam's Comprehensive Plan <i>recommends relocating the Amtrak Station to a more central location</i>.</p>
Herkimer - Oneida Counties Herkimer-Oneida Counties Long Range Transportation Plan, Destinations 2010-2030 (2009) Going Places, Herkimer-Oneida Counties Long Range Transportation Plan 2020-2040 (2019) prepared by the Herkimer-Oneida Counties Transportation Study (HOCTS)	<p>The 2009 Study recommends continuing efforts to upgrade the physical appearance and operations of Union Station in Utica. The HOCTS <i>supports plans for High Speed Rail service</i> and its potential impact on the two counties. The plan recommended public awareness of the use of rail as a means of travel.</p> <p>The 2019 Study recommends expanding intercity transportation, investing in preserving and maintaining the existing rail assets, and implementing station enhancements at existing stations of Utica and Rome.</p>
Madison County Coordinated Public Transit-Human Services Transportation Plan, Madison County, NY - prepared by Madison County Planning Department (May 2010)	<p>Madison County has prepared a coordinated transportation plan for local transit services. There is no passenger rail service in Madison County, situated between Syracuse and Utica stations.</p>
Onondaga County 2050 Long Range Transportation Plan: Syracuse Metropolitan Planning Area-2020 Update (adopted by SMTC Policy Committee in September 23,2020) prepared by the Syracuse Metropolitan Transportation Council (July 2011)	<p>The LRTP <i>supports the use of High Speed Rail for improving passenger rail service in Central New York</i> and improving the Syracuse metropolitan area economy. The plan supports improvements at the William F. Walsh Regional Transportation Center in order to provide convenient intermodal connections to high speed trains. The plan's objectives include improving transit on-time performance, maintaining transit assets in state of good repair, and improving transit options for off-peak commuters.</p>

Exhibit G-3—Consistency Summary of State and County Master Plans

Master Plans	Rail Transportation Objective
Cayuga County -Cayuga County Comprehensive Plan (1997) -Community Visioning Forum on Economic Development (July 29, 2009)	The County has been addressing an update of its Comprehensive County Plan through a series of visioning forums. The Forum on Economic Development indicated support for rail infrastructure and transportation throughout the County.
Wayne County -Wayne County Master Plan (1997) -Wayne County Comprehensive Plan Public Opinion Survey prepared by Wayne County Planning Department (2004)	A Public Opinion Survey performed in 2004 for an update of the Wayne County Comprehensive Plan established economic revitalization as a priority and pointed out need for railroad station in Lyons/the county. The County has been attempting to establish an Amtrak Station in the Village of Lyons which would service the Finger Lakes region . This station would be located between Rochester and Syracuse Stations .
Genesee and Monroe Counties -2040 Long Range Transportation Plan for the Genesee –Finger Lakes Region Genesee-Finger Lakes Region Coordinated Public Transit-Human Services Transportation Plan Update (August 2011) prepared by the Genesee Transportation Council (June 2011) -Genesee County Comprehensive Plan (1997) is in the process of being updated as part of Genesee 2050, the county comprehensive plan update -	The LRTP is supportive of establishing high speed passenger rail service on the Empire Corridor . The plan states that for high speed rail to be feasible, it must save time for existing riders, attract new riders from other modes and not interfere with freight operations. The objective of the Coordinated Public Transit-Human Services Transportation Plan Update is to update local and regional transportation needs and continue to develop a more efficient, integrated and coordinated network of service.
Erie and Niagara Counties Framework for Regional Growth – Erie and Niagara Counties, New York, Final Report (October 2006) prepared by Erie and Niagara Counties 2035 Long-Range Transportation Plan (LRTP) Update (May 2010) for the Erie and Niagara Counties Region Moving Forward 2050: A Regional Transportation Plan for Buffalo Niagara (May 2018) prepared by Greater Buffalo-Niagara Regional Transportation Council	The Regional Growth Plan and Long-Range Plan support maintaining existing transportation system to support current and future development through reuse of existing facilities and encouraging concentration of employment and activity sites within transit corridors . The plan also promotes... improving multi-modal facilities and system connectivity to capitalize on growing international and trans-border trade opportunities . The 2050 LRTP identifies the Empire Corridor High Speed Rail between Buffalo and New York City as an additional investment opportunity to consider that would be pursued with program sponsors. In 2016, the City of Niagara Falls/NYS DOT built a new multimodal facility at the U.S. Customhouse to replace an existing facility.

Exhibit G-3—Consistency Summary of State and County Master Plans

Master Plans	Rail Transportation Objective
Major Cities	
City of New York PlaNYC 2030, Prepared by NY Metropolitan Transportation Council , Update April 2011 OneNYC 2050: Building a Strong and Fair City (April 2019)	PlaNYC <i>supports improvements to the Empire Corridor</i> and the reintegration of transportation planning and land use development at the local and regional levels. Use of TOD is emphasized as an appropriate use of land near train stations. OneNYC 2050 supports increasing reliable, sustainable, and convenient transit access in New York City. The plan supports increased rail transit capacity into the Manhattan Central Business District, including upgrades and expansions to New York Penn Station.
City of Poughkeepsie City of Poughkeepsie Comprehensive Plan (November 1998) Poughkeepsie Town Plan and Final Generic Environmental Impact Statement (2007)	The 1998 Plan recommended the <i>introduction of a Trolley Shuttle bus from Main Street to the Waterfront to improve access to the Metro-North train station.</i> The 2007 Plan supports improved access to public transportation. The Plan recommends encouraging use of city bus, which provides local and countywide access to the Metro-North and AMTRAK station.
City of Albany Albany 2030: The City of Albany Comprehensive Plan (Adopted April 2, 2012)	One of the six vision components to Albany 2030 is making Albany a multimodal transportation hub. The plan supports <i>the development and implementation of the federally-designated High Speed Rail Empire Corridor.</i>
City of Schenectady City of Schenectady Comprehensive Plan 2020: Reinventing the City of Invention (Adopted March 2008)	The Plan Implementation Program indicated that the City would be interested in <i>improving the Amtrak Station facility to create a quality transportation center with efficient intermodal connections.</i>
City of Utica Utica Master Plan (2010, adopted October 5, 2011)	The Master Plan supports the formation of a multimodal facility at the former Utica Railroad Station principally for bus and taxi. No mention of HSR or train station upgrades in the plan.
City of Rochester Rochester Amtrak Station Revitalization Study (March 2002) prepared for the Genesee Transportation Council Rochester 2034: Where the River Flows Comprehensive Plan (Adopted November 12, 2019)	Rochester 2034's placemaking principles include strengthening multimodal travel and focusing development along key transportation corridors. A new intermodal transit center was built at the existing Amtrak station and opened in 2017.
City of Syracuse City of Syracuse Comprehensive Plan 2025, January 2005. City of Syracuse Comprehensive Plan 2040 (Adopted March 17, 2014)	The Plan <i>acknowledges the need for improving rail service in the Central New York Region.</i> The current train facility, the William F. Walsh Regional Transportation Center, will need to make track configuration modifications in order to accommodate the introduction of High Speed Rail. The Plan supports <i>transportation infrastructure that supports sustainable mass transit throughout Syracuse, the surrounding towns, and connects to High Speed Rail</i> , as well as concentrating development along transportation corridors.

Exhibit G-3—Consistency Summary of State and County Master Plans

Master Plans	Rail Transportation Objective
City of Buffalo The Queen City in the 21 st Century: the Buffalo Comprehensive Plan (Adopted February 7, 2006)	The Buffalo Plan <i>promotes the implementation of key transportation projects</i> in accordance with the 2030 Long Range Transportation Plan (LRTP). The LRTP <i>endorses the implementation of improvements to intercity transit service</i> for commuters and passengers between major cities and their connections. Local economic development officials have expressed interest in considering <i>relocation of the Buffalo-Depew Station closer to the downtown business district.</i>

1.2 Environmental Consequences

Chapter 4 of the Tier 1 Final EIS addresses and compares the land use impacts of the Preferred Alternative, Alternative 90B, to those of the other alternatives considered (refer to Section 4.2). The full description of impacts associated with the Base Alternative and Alternatives 90A, 110, and 125 is presented in the following sections.

1.2.1 Base Alternative

The Base Alternative represents the baseline condition against which the alternatives are measured and incorporates improvements that had already been programmed and have been constructed. The Base Alternative will maintain weekday service frequencies. Because proposed work with this alternative was located entirely within the right-of-way, no direct land use impacts were anticipated.

1.2.2 Alternative 90A

With Alternative 90A, Empire Service would provide increased frequency of service as well as improved travel times, with a program of 20 improvements in track, station, signalization, in addition to improvements proposed under the Base Alternative. It is anticipated that work could be contained within the right-of-way, and no direct land use impacts are anticipated.

1.2.3 Alternative 110

Alternative 110 would directly affect approximately 53 areas in eight counties – mostly along the Empire Corridor West and Niagara Branch.

Empire Corridor South

As with Alternatives 90A and 90B, land use impacts from Alternative 110 along the Empire Corridor South are not anticipated. Proposed work along this stretch is largely along the right-of-way.

Empire Corridor West

With Alternative 110, the proposed third track alignment from MP 164.5 to MP 165.4 in Schenectady County may impact a residential building and property and other undeveloped lands currently landlocked between the railroad and Barhydt Road and will also cross each end of Barhydt Road. Where the realigned third track would merge with the existing railroad at approximate MP 165.2, it would cross front yards and driveways of several residential properties at the intersection of Barhydt Road and Rector Road. The proposed third track and maintenance service road at the connection to the Selkirk Branch at MP 168.3 in Schenectady County may impact paved and unpaved parking/storage areas and the wooded edge of agricultural industrial property adjacent to Route 5.

In Montgomery County, the addition of a maintenance service road and additional passenger tracks or freight tracks may require realignments of Route 5 and other adjoining roadways. Realignments of Route 5 for the maintenance service road and proposed third track may impact residential properties at MP 172.6 and on Chapman Drive north of Route 5 (MP 173.6). Construction of the maintenance service road, third track, and an additional fourth track may require realignment of Route 5/Route 67 less than a mile east of the Amsterdam Station, impacting several businesses and residences. At MP 178.5, realignment of Route 5 may affect several residential, commercial, and other properties adjoining Route 5, including Old Fort Johnson, a historic site, and a fire station. At MP 179.8, realignment of Route 5 could affect the wooded edges of a private country club property, and will also affect frontages north of the highway including residences at the following locations: MPs 185, 187.3, 189, 196.4, and 196.9. The construction of the third and fourth tracks and a maintenance service road from approximate MP 181.5 to MP 182.3 in Montgomery County may impact undeveloped forested land at the edge of agricultural fields. Realignment of County Highway 26/Mohawk Drive to accommodate the service road and two additional passenger tracks may affect silos and the edges of properties near MP 183.2.

At MP 184.5, the maintenance access road and relocated freight track would affect a building adjoining the tracks, south of Route 5. Beginning within the village of Fonda (Town of Mohawk), from MP 185.9 and continuing west for three blocks to beyond the village boundaries to MP 187.8, this work outside the right-of-way may impact a number of closely spaced buildings/properties. Affected properties include several community facilities and businesses (gas station and other automotive services, restaurants, and stores), and residential properties in addition to roadway impacts. At the western end of the village, at approximate MP 186.7, the maintenance service road may impact Route 5 where it curves close to the railroad. The maintenance access road and relocated freight track may impact adjoining property for an automotive services facility just west of this, at MP 186.8.

To the west, in Montgomery County, the proposed work areas north of the track that might extend outside of the right-of-way would largely impact undeveloped or agricultural lands landlocked between the railroad and Route 5. At MP 191.7, one or more buildings may be impacted by the maintenance service road. From MP 192.5 to MP 192.8, the proposed third track and the service access road extends into the wooded portion of a residential property and may affect Route 5 at the curve where the land narrows at the Mohawk River. The relocation of Route 5 may indirectly impact farmland at this and other areas of Montgomery and Herkimer Counties although in most locations, no buildings impacts are anticipated. However, at MP 196.7, the relocation of Route 5 may impact farmland property and buildings on the opposite side of the roadway. The construction of the service access road and the proposed third track extends beyond the right-of-way at approximate MP 197.7, near a commercial/garage building in the village of Palatine Bridge (across Bridge Street from the Palatine Bridge Village Offices), and MP 198, which may affect a structure on the back of a property. The construction of the third track and a maintenance service road from MP 198.2 to MP 198.6 may

impact wooded property closely adjoining buildings on the same access drive as the historic Frey House. South of the village of Nelliston in the Town of Palatine, where the railroad closely adjoins the Mohawk River, the service access road and the proposed third track may impact an industrial structure at MP 200.6. Between MPs 205.4 to 206 in Montgomery County (Town of St. Johnsville), track realignment of the new/relocated freight tracks and the third track veers off the existing corridor and may impact primarily wooded lands bordering agricultural fields.

In Herkimer County, the third track and maintenance service road may impact wooded lands bordering agricultural fields between MPs 210 to 213. A farm structure at MP 210.8 that is closely bracketed by the railroad and Route 5 to the north may be impacted. West of MP 215 to the county line at approximate MP 235, there are many areas where the maintenance service road and, in some locations, the proposed third track may extend outside of the right-of-way. Between MPs 226.4 and 227, the construction access road and third and fourth tracks may impact the back side of several properties that front on Route 5, including residences and several industrial or commercial uses. At MP 228, a retail building closely bracketed by the railroad and Route 5 may be affected by the service road. Several residences may also be displaced at MP 230.9, and a realignment of Route 5 between MPs 230.4 and 230.8 may affect several residential frontages.

Just east of Utica Station in Oneida County, the proposed third track may impact a building at approximate MP 237.3. In Monroe County, the proposed third track and service access road may impact several buildings where construction extends beyond the right-of-way. These potential building impacts are at approximate MPs 360.6 and 361.2. In Genesee County, the proposed third track may impact a building at approximate MP 402.4. The existing Amtrak Buffalo-Depew Station will also be impacted with the construction of the new third track.

1.2.4 Alternative 125

Alternative 125 will involve the construction of exclusive new right-of-way along Empire Corridor West and would involve the greatest land use impacts of the alternatives considered.

Empire Corridor South

Roughly one mile of the proposed 125 mph track would extend south from Albany-Rensselaer Station to cross the Hudson River. That stands as the only major difference between Alternative 125 and the other Alternatives (Baseline, 90A, 90B, and 110). Besides that small portion of undeveloped and partially-cleared land, program engineers anticipate no land use impacts from Alternative 125 along the vast majority of the Empire Corridor South.

Empire Corridor West/Niagara Branch

Alternative 125 would involve construction of a total of 236 miles of track on new alignment from roughly Rensselaer to Buffalo. Alternative 125 would include new right-of-way in most areas, but would merge back with the Empire Corridor over two 15- and 16-mile segments centered on Syracuse and Rochester, respectively. Alternative 125 would require acquisition of two to three thousand acres of land for creation of a sealed corridor between Albany and Buffalo. The following section addresses the potential impacts associated with the potential corridor identified during the Tier 1 assessment.

This route covers 126 miles on new alignment between Rensselaer County and a point 8.5 miles east

of Syracuse Station. Alternative 125 extends through urban areas in Albany and Schenectady Counties over a distance of 20 miles, following the New York State Thruway (I-87/I-90) over most of this distance. In Albany County, Alternative 125 crosses through industrial land, then follows the New York State Thruway at the outskirts of the City of Albany.

Passing west into Schenectady County, Alternative 125 continues to follow the New York State Thruway through more urbanized areas in Rotterdam, crossing through several residential neighborhoods where it deviates from the Thruway. The remainder of Alternative 125 extends through primarily undeveloped or very sparsely developed areas that consist primarily of forested and agricultural lands. Impacts are possible to properties (primarily residential) fronting on the highway where Alternative 125 parallels U.S. Route 20 to the south.

In the east end of Schoharie County, where Alternative 125 passes through more developed areas in the village of Esperance, it may involve displacements primarily of residences where it extends south of Route 20. Where Alternative 125 crosses U.S. Route 20 and Route 30A/162 in the Hamlet of Sloansville, it may displace residences or businesses along these highways. The remainder of Alternative 125 in Schoharie County crosses through primarily undeveloped and sparsely developed land that consist primarily of agricultural and forestland.

In Montgomery County, Alternative 125 crosses through predominantly forested and agricultural land. Although there may be displacements where Alternative 125 crosses roads, property displacements would be minimized by the sparsely developed nature of the county. Alternative 125 crosses through a country club.

In Herkimer County, Alternative 125 crosses through predominantly forested and agricultural lands. Alternative 125 would also have the potential for displacements where it crosses roadways, on which development is generally more closely clustered than for Montgomery County along sections of highways, such as Route 168 and Route 28, and County Road 125. In particular, Alternative 125 passes through more urbanized areas within the Town of German Flatts, south of the village of Herkimer, between Routes 51 and County Road 14. This section would involve crossing three residential streets, and crossing a public golf course minimizes displacements in this area. The remainder of the county along Alternative 125 is sparsely developed.

In Oneida County, Alternative 125 crosses through predominantly agricultural lands or undeveloped or forested lands. Alternative 125 extends through the southern outskirts of the Town of New Hartford, a suburb of the City of the Utica to the north, and passes north of the Village of Clinton. Alternative 125 crosses through two golf courses on either side of Route 5. To the west, it extends through Oneida Indian Nation-owned lands, including the northernmost portion of the Atunyote Golf Course and several other agricultural/undeveloped lands. Alternative 125 extends south of the Oneida Nation facilities along the New York State Thruway that include the Turning Stone Resort and Casino. Alternative 125 continues west through predominantly rural agricultural lands, passing between the villages of Oneida Castle and Sherrill where it crosses Route 5 at the west end of the county.

Through the eastern half of Madison County, Alternative 125 parallels Route 5 to the south, but is far enough south to avoid many of the properties fronting on the highway. Alternative 125 extends through the outskirts of the City of Oneida, on the east end of Madison County, and south of the village of Canastota in the middle of the county. In Madison County, Alternative 125 crosses through predominantly rural agricultural and forestland. Where it crosses roadways, there is the potential for displacements of residential and commercial properties.

In Onondaga County, Alternative 125 would merge with the existing Empire Corridor. Where it extends 16 miles through urban areas in and surrounding the City of Syracuse, it follows the existing railroad. Depending on the design of the elevated railroad structure over the existing railroad, there may be right-of-way impacts. Outside of the Syracuse urban area, Alternative 125 diverges from the existing Empire Corridor and continues on a new alignment 61 miles west to a point 11 miles east of Rochester Station. Alternative 125 extends through predominantly rural agricultural lands in Onondaga County outside of the Syracuse urban area, but may involve displacements where it crosses roadways. In Cayuga and Wayne Counties, Alternative 125 extends north of the existing railroad through predominantly rural agricultural or forested lands, but where it crosses roadways, it may displace properties. In Wayne County, Alternative 125 would impact a private campground at MP QH322. To the west, this alternative would also pass through a trailer park at MP QH341 and may also impact businesses along this section of Route 31F.

In Monroe County, Alternative 125 extends parallel to Route 31F, through residential neighborhoods that become more dense approaching the City of Rochester. Alternative 125 merges with the existing Empire Corridor along 16 miles in and surrounding the City of Rochester. Right-of-way impacts are possible depending on the design of the elevated railroad structure over the existing railroad. Alternative 125 diverges from the existing Empire Corridor again 5.5 miles west of Rochester Station to continue on new alignment 52 miles west to Buffalo. West of where Alternative 125 diverges from Empire Corridor, outside of the City of Rochester, it extends north of a commercial/industrial area, where it may displace one building. To the west, Alternative 125 extends through rural agricultural or forested areas through the remainder of Monroe County and in Genesee County, where it may displace properties where it crosses roadways. Alternative 125 would displace a portion of a large commercial farm operation on County Road 9 (Albion Road) and would extend through portions of a sand and gravel operation on County Road 26 (Ledge Road).

In Erie County, Alternative 125 would continue through rural agricultural lands, but also extends through more densely developed area, including a mobile home park, and business/industrial areas. This alternative may affect one or more industrial buildings/properties, before merging with Empire Corridor on the outskirts of Buffalo. The elevated structure over the existing railroad extending to the Buffalo Exchange Street Station may have involved right-of-way impacts.

2. Population

2.1 Existing Conditions

2.1.1 Empire Corridor South

The counties of New York, Bronx, Westchester, Rockland, Putnam, Orange, Dutchess, Ulster, Columbia, Greene, and Rensselaer, comprise the more urbanized and populous segment of the Empire Corridor. These counties had a 2010 population of 5,456,031 persons, comprising almost 2/3 of the study area population. From 2010 to 2019, these counties grew by 104,591 persons or 1.9% to 5,560,622. The total population in these counties is projected to grow by 674,731 persons or 12.1 percent by the year 2035. Exhibit 4-4 in Chapter 4 of the Tier 1 Final EIS compares the 2010, 2019, and 2035 populations by county for the entire Empire Corridor, and Exhibit 4-5 compares the population of the major cities over time (2006, 2010, and 2019).

New York City is the most populous city in the state and nation. The city's population increased

by 161,684 (2.0%) from 8,175,133 persons in 2010 to 8,336,817 persons in 2019. **Manhattan (New York County)**, one of five boroughs of New York City (that are also coterminous with counties), is the most densely populated county in the country. Three of the five New York City boroughs (Brooklyn, Queens, and Staten Island) are outside the study area. The two study area counties of New York (Manhattan) and the Bronx had a combined 2010 population of 2,970,981 persons or 33.2 percent of the study area. In 2019, these two counties grew by 75,932 persons (2.6%) to 3,046,913 persons or 33.8 percent of the study area. These two counties (or boroughs) are projected to grow by 264,691 persons, or 8.7 percent, by the year 2035. Manhattan is forecasted to grow by 71,972 persons (or 4.4%) by 2035, and **Bronx County** is projected to grow by 192,719 persons, an increase of 13.6 percent.

Within the Hudson Valley north of New York City are the counties of Westchester, Rockland, Putnam, Orange, Dutchess, Ulster, Columbia, and Greene, situated along the east and west banks of the Hudson River. The resident population within these Hudson Valley counties totaled 2,325,621 persons in 2010 or approximately 26.0 percent of the study area. In 2019, the resident population within these Hudson Valley counties grew by 29,374 (1.3%) to 2,354,995 persons.

Population is densest in the more urbanized areas closest to New York City. **Westchester County** accounted for 949,113 persons, or 10.6 percent, in 2010 of the study area population. In 2019, Westchester County grew by 18,393 (1.9%) to 967,506 persons. The largest city in this region is Yonkers in southern Westchester County, bordering Bronx County, with a 2010 population of 195,976 persons. The population increased by 4,394 (2.2%) by 2019 to 200,370 persons. In 2010, **Rockland County** accounted for 311,687 persons, or 3.5 percent of the study area population, and **Orange County** had 372,813 residents in 2010, or 4.2 percent of the study area total. In 2019, Rockland County grew by 14,102 persons (4.5%) to 325,789 residents, and Orange County grew by 12,127 (3.3%) to 384,940 residents.

In 2010, the remaining four counties to the north in this portion of the Hudson Valley each represented between 0.6 percent (Greene County, with 49,221 residents) to 3.3 percent (Dutchess County with 297,488 persons) of the study area population. Between 2010 and 2019, these counties lost between 2,033 persons (-4.1%) to 4,920 persons (2.7%). Poughkeepsie, located in Dutchess County, is the second largest city in this region with a 2010 population of approximately 31,045 persons and lost population (530 persons or 1.7%) by 2019, with a population of approximately 30,515 persons.

These eight counties in the Hudson Valley region are forecasted to experience the largest population growth rates outside of New York City, reflecting their attractiveness as bedroom communities within the New York City and Capital District commutersheds. The population of these eight counties is projected to increase by 675,062 persons or 11 percent by the year 2035, with the highest growth rates in the areas outlying New York City. The largest increase is expected in Orange County, which is forecasted to increase by 127,518 persons or 33.1 percent by 2035. Westchester County is projected to increase by 85,309 persons in 2035, an increase of 8.8 percent. The largest percentage increase is forecasted for Putnam County, with an increase of 44.1 percent, or 43,326 persons. Rockland County is expected to experience an increase of 34,168 persons, or 10.5 percent, by 2035.

Population growth rates by 2035 generally decrease with increasing distance from the city. Growth projected by 2035 in **Dutchess County** is 22 percent (or 64,746 persons) and is 23.2 percent (or 41,202 persons) in **Ulster County**. To the north, the populations of more rural areas within **Columbia and Greene Counties** are forecasted to grow by 13.9 percent (8,263 persons) and 12.4 percent (5,839 persons), respectively, by 2035.

To the north, **Rensselaer County** is part of the Capital District Region. In 2010, the population of Rensselaer County totaled 159,429 persons or approximately 1.8 percent of the study area population. In 2019, the population of Rensselaer County totaled 158,714 persons and is forecasted to experience a drop in population of 331 persons (or -0.2%) by the year 2035. This forecasted drop in population reflects historic job losses in the region that have occurred dating back to 1960, with the decline of the manufacturing and industrial base.

2.1.2 Empire Corridor West/Niagara Branch

The population in the fourteen counties (Albany, Schenectady, Schoharie, Montgomery, Herkimer, Oneida, Madison, Onondaga, Cayuga, Wayne, Monroe, Genesee, Erie and Niagara) along Empire Corridor West/Niagara Branch totaled 3,495,494 persons in 2010 and declined by 39,483 persons to 3,456,011 in 2019. In contrast to the counties to the south, this region is forecasted to experience a loss in population, totaling 22,949 persons (or -0.7%) by 2035. This decline follows historic population losses precipitated by the decline of the region's core manufacturing and industrial base. Schoharie County is projected to experience the largest future percentage increases in population in 2035, with a projected growth of 12.2 percent (3,794 persons).

Albany and Schenectady Counties are part of the Capital District, along with Rensselaer County, and Saratoga County (outside the study area). Albany and Schenectady Counties comprised 5.1 percent of the study area population, totaling 458,931 persons in 2010 and 460,805 persons in 2019. These counties are projected to lose approximately 5.0 percent of their total population by 2035 (22,950 persons).

Schoharie County, along Alternative 125, had a total population of 32,749 persons in 2010 that decreased by 1,750 persons by 2019, comprising only 0.34 percent of the study area population. Schoharie County is projected to increase in population by 3,794 persons to 34,793 in 2035, an increase of 12.2 percent.

To the west, the counties of Montgomery and Herkimer are predominantly rural. The combined population of these two counties, 114,738 persons in 2010, declined by 4,198 in 2019 to total 1.2 percent of the study area population. These two counties are forecasted to experience a population loss of 2,219 persons by 2035. The population of **Montgomery County** is expected to decline by 5.8 percent, and **Herkimer County** is projected to decrease by 1.0 percent.

Oneida County's population decreased by 6,207 persons from 2010 to 228,671 in 2019. Oneida County is forecasted to lose 2.6 percent of its population by 2035. Utica is the largest city in the county, with a 2010 population of 62,235, which declined to a population of 59,750 in 2019.

Madison County, along with Onondaga and Cayuga Counties, is part of the Central Region of New York. Madison County, which is predominantly rural, comprised 0.8 percent of the 2010 study area population and declined by 2,501 persons to a total population of 70,941 in 2019. Madison County is projected to gain 2.5 percent in population by 2035.

Onondaga County, along with Cayuga, Wayne, and Monroe Counties, is part of the Finger Lakes District, a key tourism region in the state. Onondaga County comprised 5.2 percent of the study area population in 2010 and declined in population by 6,498 persons to total 460,528 in 2019. Onondaga County is projected to lose 2.2 percent of its population by 2035. The largest city in the county is

Syracuse, with a population that fell from 145,170 persons in 2010 to 142,327 persons in 2019.

Cayuga and Wayne Counties, predominantly rural agricultural in nature, together comprised 1.9 percent of the study area population in 2010. The population of these counties fell by 7,304 persons to total 166,494 in 2019. This area is forecasted to gain 7.7 percent in population by 2035.

Monroe County is one of the more populous counties, totaling 744,344 persons in 2010, or 8.3 percent of the study area population. In 2019, the population of Monroe County decreased by 2,574 persons (or by 0.4%) to 741,770. The county is expected to lose 0.1 percent of its population by 2035. The largest city in the county, Rochester, decreased in population from 210,565 in 2010 to 205,695 in 2019.

Genesee County is predominantly rural and comprised only 0.7 percent of the study area population in 2010. The population of this county fell by 2,799 persons to total 57,280 persons in 2019. This county is projected to gain 0.4 percent of its population by 2035.

At the western end of the study area, Erie and Niagara Counties together comprised 12.7 percent of the study area population in 2010 (a total of 1,135,509 persons). By 2019, Erie County lost 338 residents by, Niagara County lost 7,188 of its population over the same time period, for a combined population of 1,127,983 persons in 2019. The largest city in Erie County, Buffalo had a 2010 population of 261,310 and declined to 255,284 by 2019. These counties are expected to experience a population increase of 605 persons by 2035. **Erie County** is projected to decline by 0.7 percent to total 912,661 persons by 2035. **Niagara County**, which includes the last station stop at Niagara Falls, a major tourism destination, is expected to gain 3.2 percent to total 215,927 persons by 2035.

2.2 Environmental Consequences

Chapter 4 of the Tier 1 Final EIS addresses and compares the impacts of the Preferred Alternative, Alternative 90B, to those of the other alternatives considered (refer to Section 4.3). The impacts of the Base and the other Build Alternatives on the region's population are described in more detail below.

2.2.1 Base Alternative

The Base Alternative represents the baseline condition against which the alternatives are measured and incorporated improvements that had already been programmed and have been constructed. The Base Alternative will maintain weekday service frequencies.

With the Base Alternative, population will continue to grow at least as fast as projected in the study area counties. It is projected that the study corridor will realize a 7.2 percent gain in population from 2019 to 2035, or an increase of 651,782 persons. In the year 2035, population along the eleven Empire Corridor South counties is projected to increase by 674,731 persons or 12.1 percent, while the population within the fourteen counties along the Empire Corridor West/Niagara Branch study area is projected to decline by 22,949 persons or -0.7 percent.

Improvements to intercity passenger service that result in increases in ridership and improve mobility and travel choices may, in turn influence the attractiveness of the area for businesses and residents. This in turn could result in increases in population. With the Base Alternative, this effect, if discernible, will represent a minimal increase.

2.2.2 Alternative 90A

With additional track, Alternative 90A service frequencies and travel time improvements would result in increases in ridership. Improved mobility and travel choices could make the program area more attractive to businesses and residents. This may translate into increases in population along the corridor that would be greater than those experienced with the Base Alternative.

2.2.3 Alternative 110

With Alternative 110, improved frequency and travel times would provide increases in mobility and travel choices, making the program area potentially more attractive to businesses and residents. This could result in increases in population, which would be greater than for Alternative 90B, based on increased ridership (200,000 additional passengers (one-way) annually) and attractiveness of the area to residents and businesses, and this effect may be more pronounced in the vicinity of the station sites.

2.2.4 Alternative 125

This alternative would have the greatest potential to result in increases in population within the program area, and this effect may be more pronounced in the area of the station sites served. This alternative would result in the greatest improvements to service in areas west of Albany and would produce the largest ridership increases (1.7 million more passengers annually than the Preferred Alternative). Improving the frequency and travel times of intercity passenger rail service, particularly west of Albany, would increase mobility and travel choices for businesses and residents, making the program area potentially more attractive as a bedroom community.

3. Employment and Businesses

3.1 Existing Conditions

3.1.1 Employment

Section 4.3.3 provides a county by county description of employment and describes the major business districts. Exhibit 4-6 in Chapter 4 of the Tier 1 Final EIS compares the 2010, 2019, and 2035 employment and unemployment rates by county for the entire Empire Corridor. Employment in the twenty-five study area counties totaled 6,372,282 in 2010 and grew by 949,344 jobs (or 14.9%) by 2019.

Empire Corridor South

The eleven counties along Empire Corridor South accounted for the majority of study area employment and provided 4,307,858 jobs in 2010, increasing by 823,375 persons (19.1%) to 5,131,233 jobs in 2019. This labor market is projected to increase by 19.2 percent (825,889 jobs) from 2010 to 2035. Average unemployment rates decreased by roughly half in almost all study area counties.

Empire Corridor West/Niagara Branch

The fourteen counties along Empire Corridor West/Niagara Branch accounted for 2,064,424 jobs in 2010 and increased by 125,969 jobs (or 6.1%) to 2,190,393 jobs by 2019. This labor market is forecasted to expand by 15.4 percent by 2035, with a projected increase of 337,272 jobs.

3.2 Environmental Consequences

Chapter 4 of the Tier 1 Final EIS addresses the impacts of the Preferred Alternative, Alternative 90B, and presents a comparison to the other alternatives considered (refer to Section 4.3). The employment and business impacts of the Base Alternative and other Build Alternatives are described in more detail below.

3.2.1 Base Alternative

With the Base Alternative, consisting of eight previously completed improvements, weekday service frequencies will be maintained. The Base Alternative involved construction restricted to the right-of-way, and no direct business displacements were anticipated. With this alternative, employment and business activity will continue to grow as projected, with a total increase of 4.6 percent, or 339,786 jobs from 2010 to 2035. The eleven counties along Empire Corridor South, accounting for the majority (70%) of study area employment is projected to increase by 15.4 percent from 2019 to 2035, with an increase projected of 337,272 jobs. For the fourteen counties along Empire Corridor West/Niagara Branch, the labor market is forecasted to expand by 15.4 percent from 2019 to 2035, with a projected increase of 337,272 jobs by 2035.

3.2.2 Alternative 90A

Alternative 90A would involve construction confined to the existing right-of-way, and no direct business displacements would occur. The increased frequency of service and improved travel times with Alternative 90A would result in increases in ridership and could make the program area more attractive to both employers and employees. This would represent a positive effect for businesses, both from the perspective of potential clients and business and improving accessibility and convenience for workers.

Any corresponding improvements in freight traffic would benefit businesses that rely on freight for their operations. This may result in increases in employment and business activity that would be greater than the increases experienced under the Base Alternative, particularly in the area of the station sites.

3.2.3 Alternative 110

Alternative 110 would involve greater property impacts (with potential direct impacts on 53 areas in eight counties) than the Preferred Alternative, Alternative 90B, increasing the potential for direct impacts on businesses.

Alternative 110 would provide further improvements in travel times and ridership, which could potentially benefit both businesses, and provide more convenient access for prospective clients and employees. This could result in increases in employment and business activity that would be greater

than for Alternative 90B, particularly in the vicinity of station sites. Better segregation of passenger service and freight service between Schenectady and Buffalo, and corresponding improvements in freight movements, could benefit businesses that rely on freight traffic.

3.2.4 Alternative 125

Of the alternatives under consideration, Alternative 125 would involve the greatest potential for business displacements and direct impacts, since it would involve construction of 236 miles of a new sealed corridor requiring acquisition of two to three thousand acres of land. However, the conceptual location of the new corridor in primarily undeveloped rural lands between the major urban centers would minimize business displacements. The acreage of commercial land within the 125 Study Area is shown in Exhibit 4-3 of the Tier 1 Final EIS.

At the same time, this alternative may represent the largest overall regional benefit to businesses, employment, and business activity. This effect may be more pronounced in the stations that experience improved service with Alternative 125 (Albany-Rensselaer, Syracuse, Rochester, Buffalo [Buffalo-Depew and Buffalo Exchange Street], Niagara Falls Stations as well as stations along Empire Corridor South). Alternative 125 provides the fastest travel times of the alternatives under consideration, and provides more frequent service. Alternative 125 provides exclusive, express, grade-separated tracks between Albany-Rensselaer and Buffalo-Depew stations, which bypass several of the station sites along the existing Empire Corridor (Schenectady, Amsterdam, Rome, and Utica). This alternative will maintain existing service to Amtrak passenger stations currently served along the Empire Corridor, so no adverse impacts to these business districts from loss of business generated by patrons will occur.

4. Environmental Justice and Title VI

4.1 Existing Conditions

4.1.1 Overview

The environmental justice study area consists of 20 counties for the 90/110 Study Area and 21 counties for the 125 Study Area, as these study areas are defined in Section 4.1 of the Tier 1 Final EIS. Exhibit 4-7 in the Tier 1 Final EIS shows the minority, low-income, and disadvantaged populations (LEP persons, persons with disabilities, persons at least 65 years of age) for the study area. These statistics were compared to statewide averages and minority and low-income populations were also compared to federal (CEQ) and state (NYSDEC) environmental justice criteria. Federal guidance on EJ allows for agencies to defer to state or local definitions of EJ populations, provided they are at least as inclusive as federal definitions. Federal EJ criteria is also presented, but the NYSDEC criteria is more conservative than the federal criteria in rural areas (for minorities) and for low-income. Overall, the State of New York has a minority population of 47.5 percent according to updated data from the 2020 U.S. Decennial Census (up from 34.3 percent in 2010) and a low-income population of 13.8 percent. The NYSDEC criteria for environmental justice include a minority population equal to or greater than 51.1 percent in urban areas. This Environmental Justice assessment considered this to be the threshold for a potential environmental justice area for most of the study area counties except for seven rural counties (Columbia, Schoharie, Herkimer, Madison, Cayuga, Wayne, and Genesee Counties), where the threshold of 33.8 percent for minority populations applied. The NYSDEC criterion for a low-income population is 23.59 percent.

In general, the New York metropolitan area, and in particular, Bronx County had the highest statistics for minorities and low-income populations. However, although both Manhattan and the Bronx had populations greater than the statewide average, only the Bronx exceeded the NYSDEC criteria, with Westchester County just under the 51.1 percent criterion at 50.5 percent. Persons with Limited English Proficiency (LEP) make up 26.0 percent of the population in the Bronx, the highest percentage of any county along the Empire Corridor. LEP persons comprise 14.8 percent of the New York County population, slightly higher than for the entire State of New York (13.3%). At 22.5 percent, New York City has a higher proportion of LEP persons than any city along the Empire Corridor.

Generally, as the rail corridor moves north out of New York City and Bronx County, statistics for counties to the north are lower than statewide averages. Although the counties with metropolitan areas had generally higher minority populations, and low-income populations are generally higher west of Albany; only three other counties, Montgomery, Oneida, and Erie Counties, exceeded the statewide averages and only for low-income populations. The environmental justice statistics were generally higher in the cities than for the counties along the rail corridor, as shown in Exhibit 4-7. Section 4.4 reviews in more detail the environmental justice characteristics of the 90/110 Study Area along both Empire Corridor South and Empire Corridor West/Niagara Branch. The 125 Study Area along the Empire Corridor West/Niagara Branch is described below.

4.1.2 Empire Corridor West/Niagara Branch: 125 Study Area

Minority and low-income percentages are county-wide; therefore, the percentages for Albany, Schenectady, Montgomery, Herkimer, Oneida, Madison, Onondaga, Cayuga, Wayne, Monroe, Genesee, Erie, and Niagara counties remain the same as for the Empire Corridor West/Niagara Branch 90/110 Study Area. Although this alignment is generally either south or north of the existing Empire Corridor West/Niagara Branch Study Area over a combined distance of 240 miles, the two alignments do converge through the major urban centers of Syracuse, Rochester, and Buffalo, where they merge to continue to Niagara Falls.

West of Rensselaer County, the 125 Study Area branches off to extend south of the cities of Albany and Schenectady, following the New York State Thruway, then leaves the New York State Thruway to traverse through primarily rural land through Schenectady, Schoharie, Montgomery, Herkimer, Oneida, and Madison counties.

Schoharie County is the only county that falls within the 125 Study Area that the existing Empire Corridor West/Niagara Branch 90/110 Study Area does not traverse. Of all the study area counties, Schoharie has the second lowest minority population (10.3%). The low-income population remains similar to the western portion of the Empire Corridor study area at 12.1 percent, and the percentage of LEP persons is low, at 1.0 percent. The statistics for people with disabilities and persons at least 65 years of age are higher than for the state as a whole, at 16.5 percent and 21.0 percent, respectively.

Like the 90/110 Study Area, the 125 Study Area also passes through the cities of Albany, Schenectady, Syracuse, Rochester and Buffalo; however, the 125 Study Area does not pass through the city of Utica. Existing Amtrak passenger service to all existing station stops along the Empire Corridor West (including the stations bypassed by the 125 Study Area) will be maintained under the 125 mph alternative, so these populations' centers will continue to be serviced.

4.2 Environmental Consequences

Chapter 4 of the Tier 1 Final EIS addresses and compares the environmental justice impacts of the Preferred Alternative, Alternative 90B, to those of the other alternatives considered, including the Base Alternative (refer to Section 4.4). The impacts of the Base and other Build Alternatives on the region's population are described below.

4.2.1 Base Alternative

Since there were fewer improvements in the Base Alternative compared with the various Build Alternatives, there would also be fewer benefits in terms of increased service and reliability to the low-income and minority communities. The Tier 1 Draft EIS addressed the potential impacts of the eight projects comprising the Base Alternative on environmental justice/Title VI.

With the Base Alternative, disproportionately high and adverse impacts to minority or low-income communities remain unlikely. Of the counties in the Empire Corridor study area, only Bronx County exceeded NYSDEC environmental justice thresholds of greater than 51.1 percent of the population for minority communities and greater than 23.59 percent of the population for low-income communities. Currently, the Base Alternative does not include improvement projects within Bronx County; therefore, at the county level, it is unlikely that there will be disproportionate impacts to low-income and minority communities.

At the city level, one improvement project associated with the Base Alternative included Syracuse track improvements and signal upgrades within the eastern portion of the City of Syracuse (EW-6, MPs 278 to 291). The addition of an extra track and signal improvement work occurred primarily in the existing right-of-way, and it is unlikely that these improvements had a disproportionately high and adverse impact to the low-income community within the City of Syracuse. Additionally, upgrades to the Rochester Station (EW-19) in an area where NYSDEC environmental justice thresholds are exceeded will ultimately provide a benefit to these communities, and disproportionately high and adverse impacts to minority or low-income communities were unlikely through the station upgrade.

4.2.2 Alternative 90A

With Alternative 90A, upgrades to stations and increased trip frequency would ultimately provide a benefit to communities. Disproportionately high and adverse impacts to minority or low-income communities would be unlikely.

Second track improvements proposed for Bronx County under Alternative 90A would occur within the current right-of-way and would be unlikely to have a disproportionately high and adverse impact to minority and low-income communities in this area. Increased frequency of service could have the potential to incur additional noise impacts from train passbys, however the additional trips represent a minimal increase over current rail traffic that includes Metro-North commuter rail traffic. Alternative 90A would also involve work within the right-of-way, with no significant change in the visual appearance of railroad facilities and therefore would involve minimal visual impact. Construction of the program could involve noise and air quality impacts, but these would be temporary in nature.

Proposed signal upgrades, station improvements and areas of extra track proposed along the corridor for Alternative 90A would occur within the major urban areas of Poughkeepsie, Albany,

Syracuse and Rochester. Minority and/or low-income populations that exceed the NYSDEC criterion are located in these improvement areas; however, Alternative 90A improvements (including signal upgrades and extra track) are anticipated to be contained within the existing right-of-way. Therefore, property impacts would not occur, and disproportionately high and adverse impacts to minority or low-income communities would be unlikely. Noise impacts from train operations are also not anticipated as the increase from the Base Alternative is projected to be less than 3 dBA (considered imperceptible) at receptors at a distance of 50 feet from the centerline. Air quality impacts to EJ populations are also not anticipated. Station improvements at the Syracuse and Buffalo-Depew stations also are anticipated to be contained within the right-of-way, but would involve larger construction impacts (e.g., temporary noise increases).

4.2.3 Alternative 110

The Alternative 110 would incur overall economic and transportation benefits from improved travel times. The addition of third and fourth tracks and maintenance service roads will involve right-of-way impacts in more locations than for Alternative 90B. However, it is unlikely that there would be disproportionately high and adverse impacts to minority or low-income communities, since the majority of these displacements would occur in rural or relatively low-density population areas where environmental justice communities have not been identified. However, in the cities of Utica, Syracuse, Rochester, and Buffalo, there are limited residential takings anticipated, and minimal impacts are anticipated to environmental justice communities. Utica, Syracuse, Rochester, and Buffalo have minority and low-income communities that exceed the NYSDEC criterion; however, third and fourth tracks would generally be added within the existing right-of-way in these cities. Noise impacts from train operations are also not anticipated as the increase from the Base Alternative is projected to be less than 3 dBA (considered imperceptible) at receptors at a distance of 50 feet from the centerline. Air quality impacts to EJ populations are also not anticipated. Alternative 110 would involve greater visual impacts than Alternative 90B, but since the work would be largely located within the existing right-of-way, Alternative 110 would not involve substantial visual impacts to surrounding EJ communities.

4.2.4 Alternative 125

For Alternative 125, increased trip frequency and reduced travel times would ultimately provide a benefit to communities. Disproportionately high and adverse impacts to minority or low-income communities would be unlikely.

The majority of Alternative 125 would be on new alignment along the Empire Corridor West, passing through rural and agricultural land, which would have low potential for impacts on environmental justice populations. There are planned third and fourth track improvements on elevated structure that would occur in more urban locations including the cities of Syracuse, Rochester and Buffalo. Rochester, Syracuse and Buffalo have minority and low-income communities that exceed the NYSDEC criterion; however, third and fourth tracks would generally be added within the existing right-of-way in these cities. Noise impacts from train operations along Empire Corridor are also not anticipated as the increase from the Base Alternative is projected to be less than 3 dBA (considered imperceptible) at receptors at a distance of 50 feet from the centerline. Air quality impacts to EJ populations are also not anticipated. The elevated tracks could have visual impacts in the counties of Rensselaer and Albany where it extends along the New York State Thruway and the communities of Syracuse, Rochester, and Buffalo, and there is a potential for right-of-way impacts where the tracks are elevated in these urban areas. Alternative 125 would involve the greatest potential for noise

impacts for a new two-track corridor dedicated to high-speed passenger service approximately 280 miles from Albany/Rensselaer station to Buffalo Exchange Street station. If this alternative had been advanced for further consideration, a more detailed assessment would have been performed in Tier 2 using census block level information to identify potential environmental justice populations and refine the design/relocate the alignment to avoid or minimize potential impacts.

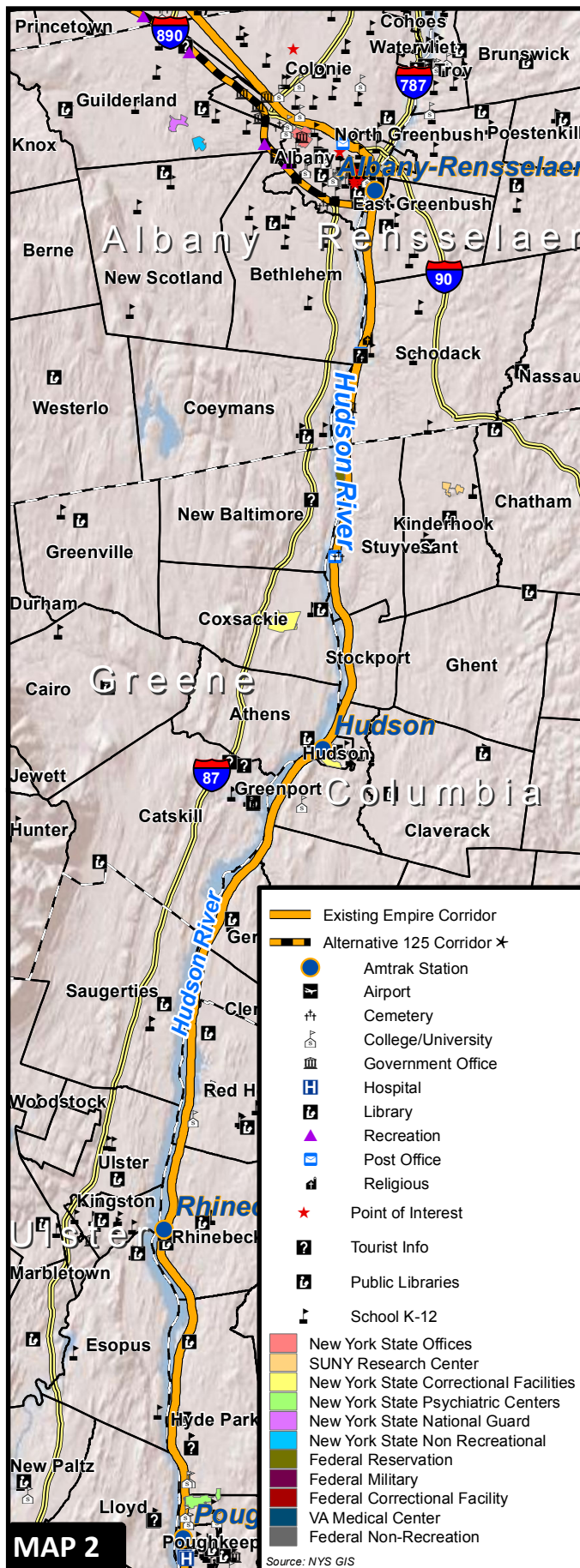
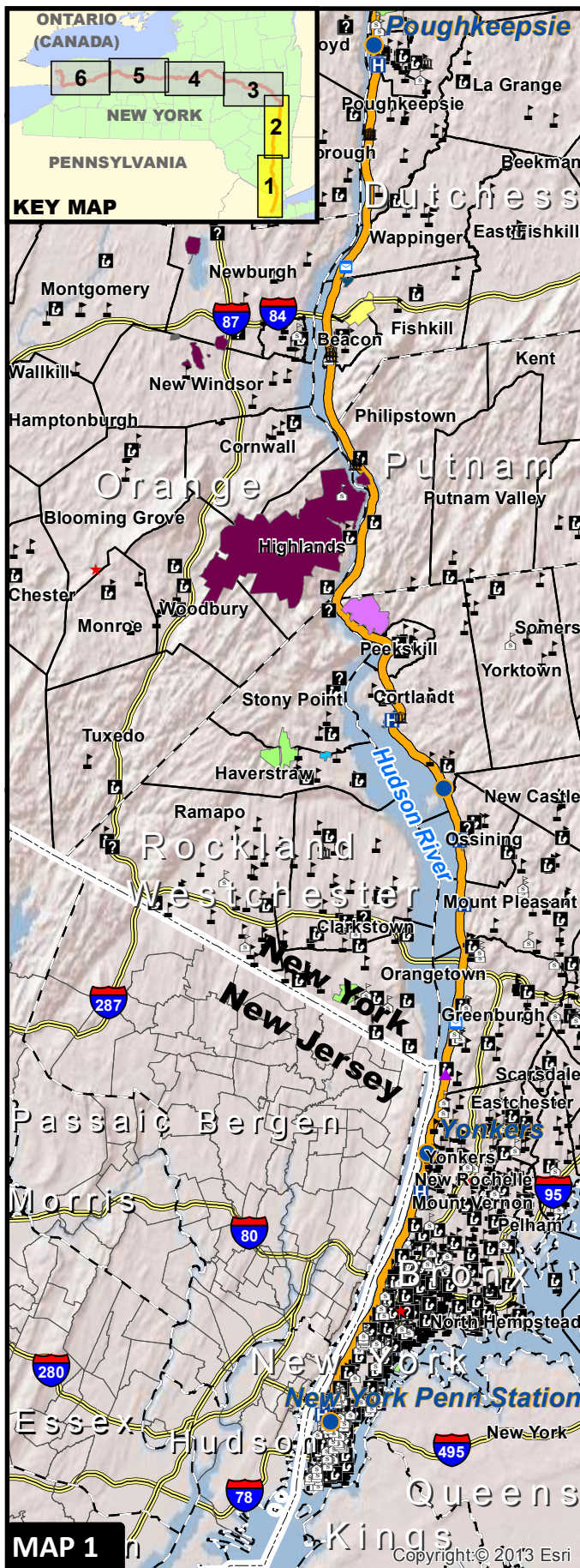
The exclusive two-track high-speed corridor for Alternative 125 would bypass the cities of Albany and Utica, which have low-income populations that exceed the NYSDEC criterion, although existing Empire Amtrak service would be maintained to stations in these cities. Existing Amtrak passenger service to all existing station stops along the Empire Corridor West/Niagara Branch (including the stations bypassed by Alternative 125) would be maintained under Alternative 125, so these population centers would continue to receive service. However, diversion of express travelers from these stops may have an adverse effect on the economies of these cities with EJ populations.

5. Community Facilities

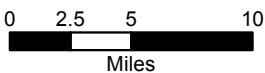
5.1 Existing Conditions

As illustrated in Exhibit G-4, Community Facilities Maps (3 of 3) within the 90/110 Study Area, there were a total of:

- Twelve colleges or institutes and thirty-three K-12 schools;
- Eight fire stations and four police stations (including a police station for the Oneida Indian Nation);
- Sixteen medical facilities, including hospitals, medical offices, and emergency ambulance services;
- Twenty-two post offices;
- Nineteen libraries;
- Twenty-two places of worship;
- Twenty-three government offices, including a foreign consulate, courthouses, federal, state, county, and municipal government offices;
- Four military installations, including Camp Smith New York State Military Reservation, U.S. Military Academy at West Point, a U.S. Naval Recruiting office in Schenectady, and Niagara Falls Air Force Reserve Base;
- Twenty-five cultural sites, including museums, arenas, auditoriums, and tourist information centers;
- Nine facilities that are either Department of Public Works maintenance facilities, sewer facilities, or solid waste/landfill/recycling facilities;
- Five correctional facilities;
- Three airports; and



*Alt. 125 as shown is a potential corridor used to analyze the potential operating characteristics, environmental impacts and cost for this speed (125 mph) threshold.

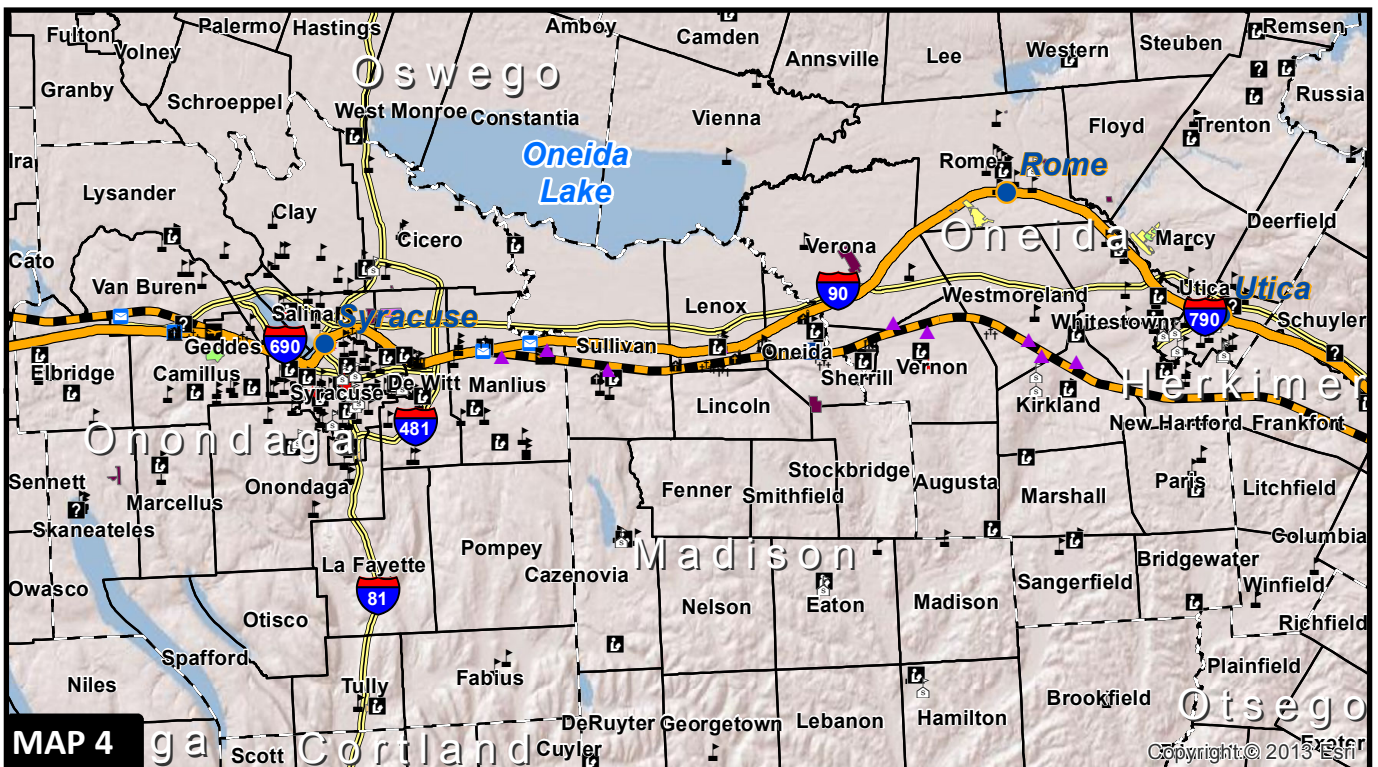
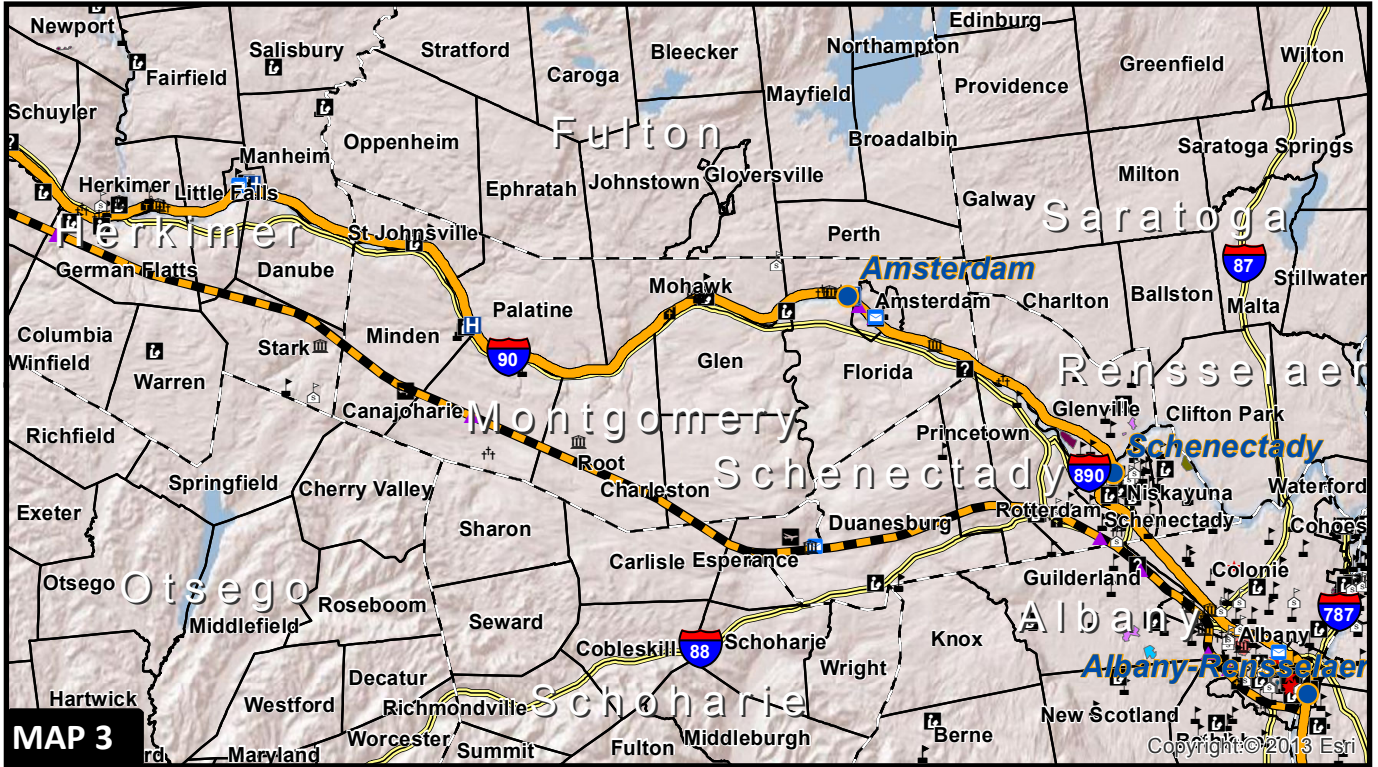
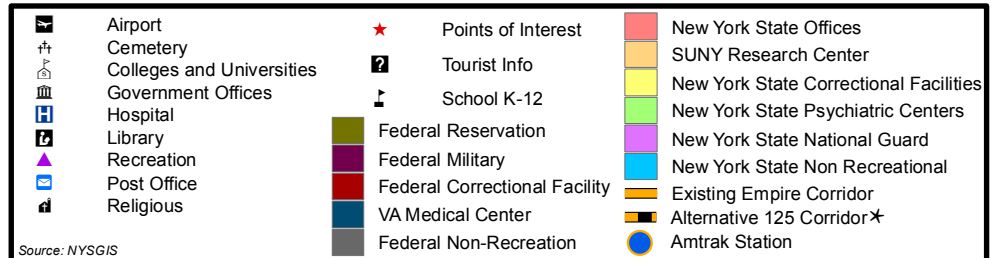
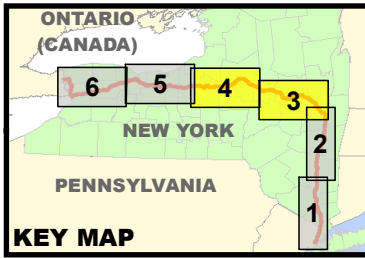


Community Facilities Map

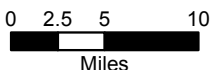
Exhibit G-3

Tier 1 EIS
High Speed Rail
Empire Corridor Program





*Alt. 125 as shown is a potential corridor used to analyze the potential operating characteristics, environmental impacts and cost for this speed (125 mph) threshold.

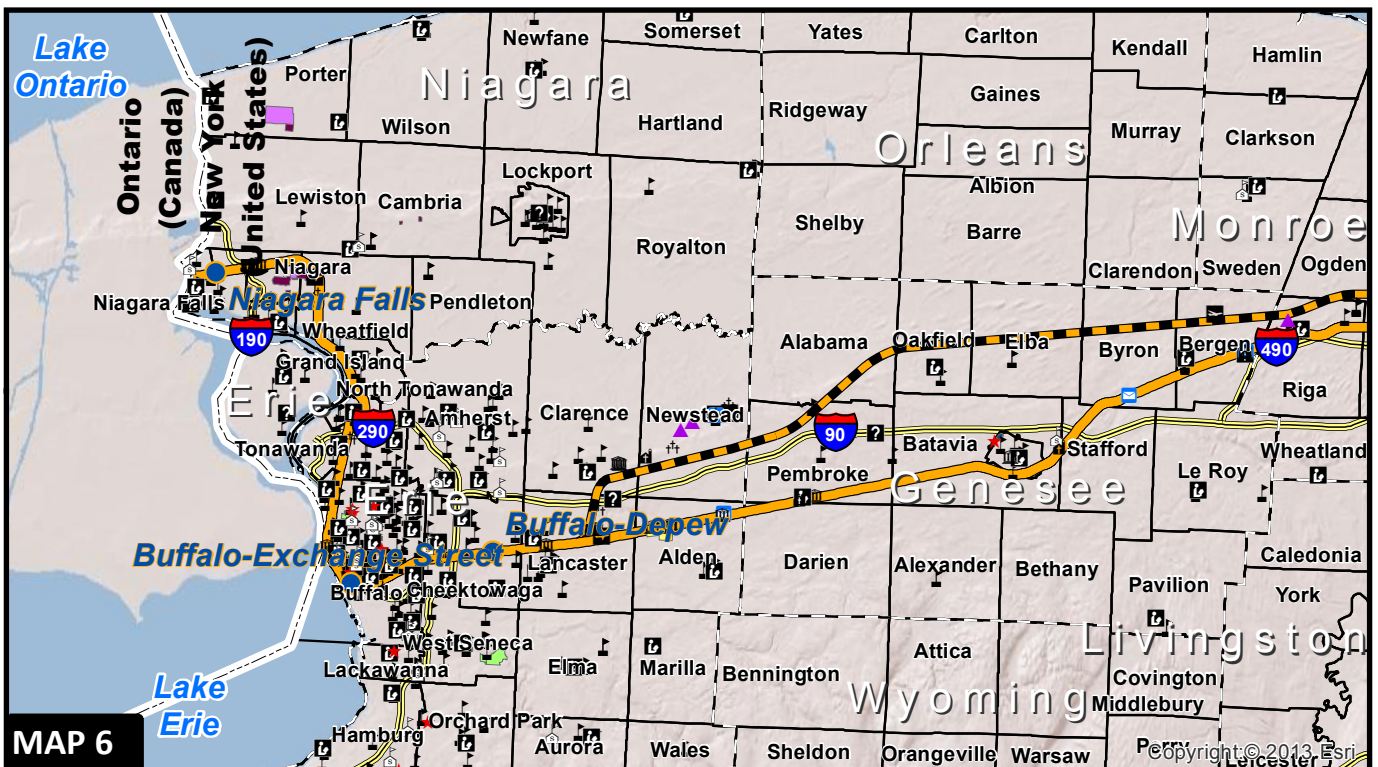
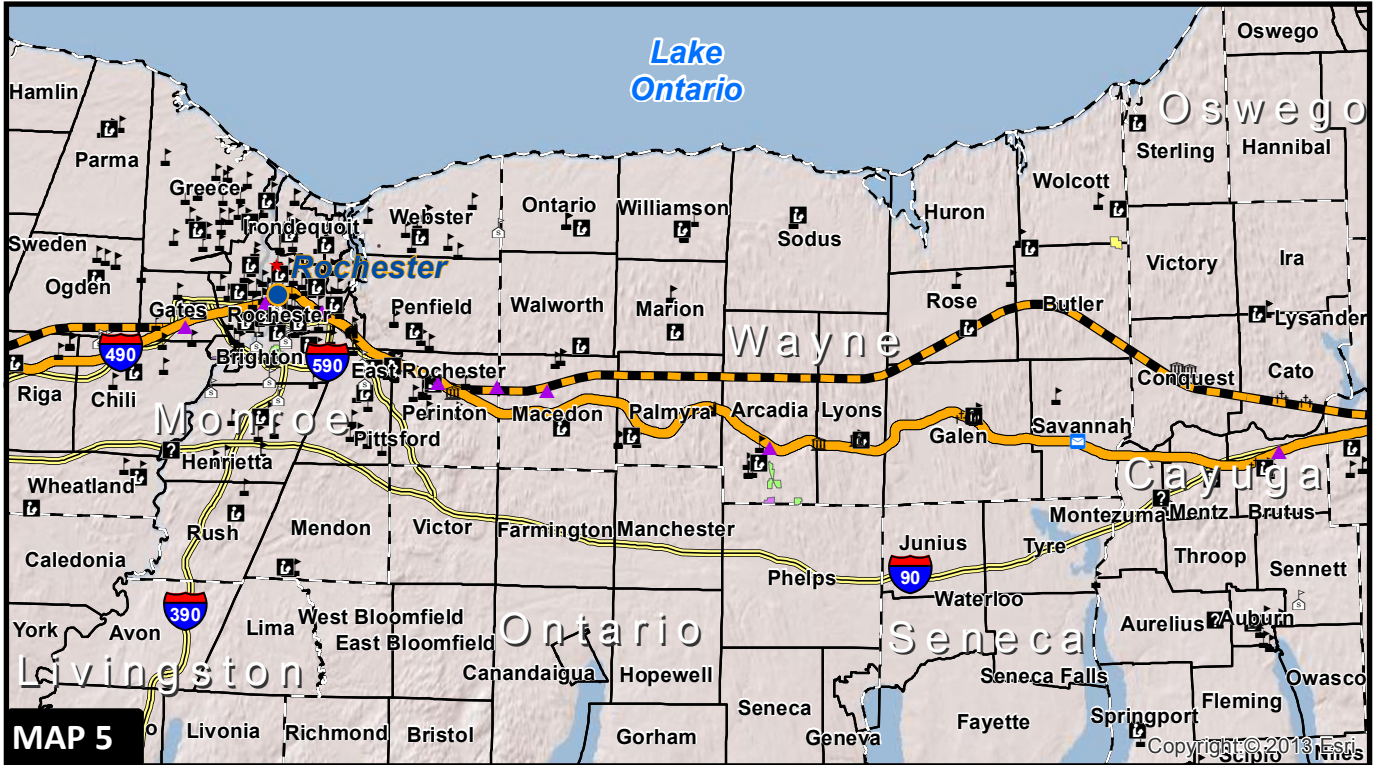
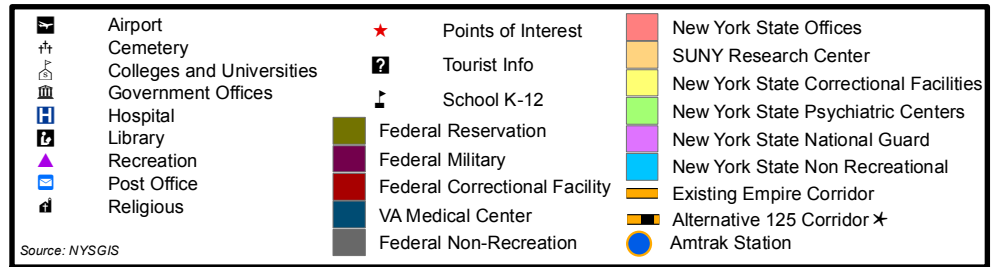
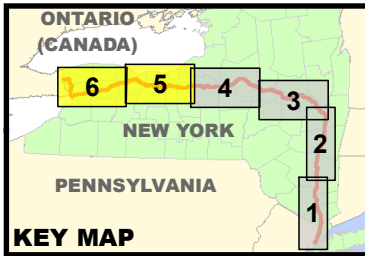


Community Facilities Map

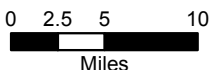
Exhibit G-3

Tier 1 EIS
High Speed Rail
Empire Corridor Program





*Alt. 125 as shown is a potential corridor used to analyze the potential operating characteristics, environmental impacts and cost for this speed (125 mph) threshold.



Community Facilities Map

Exhibit G-3

Tier 1 EIS
High Speed Rail
Empire Corridor Program



- Seventeen cemeteries.

Within the 125 Study Area, there were a total of:

- Nine colleges or institutes and thirty-three K-12 schools;
- Three fire stations and two police stations;
- Thirteen medical facilities, including hospitals, medical offices, and emergency ambulance services;
- Twelve post offices;
- Ten libraries;
- Eleven places of worship;
- Thirteen government offices, including a foreign consulate, courthouses, federal, state, county, and municipal government offices;
- Four military installations, including Camp Smith New York State Military Reservation, U.S. Military Academy at West Point, New York Army National Guard Heliport in Albany, and Niagara Falls Air Force Reserve Base;
- Twenty-eight cultural sites, including museums, arenas, auditoriums, and tourist information centers;
- Five facilities that are either Department of Public Works maintenance facilities, sewer facilities, or solid waste/landfill/recycling facilities;
- One correctional facility;
- Four airports; and
- Thirteen cemeteries.

5.2 Environmental Consequences

Chapter 4 of the Tier 1 Final EIS addresses and compares the impacts of the Preferred Alternative, Alternative 90B, to those of the other alternatives considered (refer to Section 4.5). The potential effects impacts of the Base Alternative and other Build Alternatives are described in more detail below.

5.2.1 Base Alternative

The Base (No Action) Alternative represents the baseline condition against which the alternatives will be measured and incorporates improvements that had already been programmed and have been constructed. The Base Alternative will maintain weekday service frequencies.

Because proposed work with this alternative was anticipated to be located entirely within the right-of-way, no land acquisitions were anticipated, and therefore no impacts to community facilities were anticipated.

5.2.2 Alternative 90A

The work with Alternative 90A will largely lie within the existing right-of-way; therefore, no impact to community facilities are anticipated. Alternative 90A involves increased frequency of service as well as improved travel times, with a program of 20 improvements in track, station, signalization.

5.2.3 Alternative 110

Empire Corridor South

No additional work within Empire Corridor South, other than that proposed for Alternative 90A, is proposed, and impacts to community and public facilities impacts are not anticipated to occur.

Empire Corridor West/Niagara Branch

With Alternative 110, trackwork would start at MP 159 and would extend west from here. At MP 160, the proposed siding and crossover would be adjacent to a state agency office and the Empire State College of the State University of New York, but would not extend outside of the right-of-way at this location. Track realignments outside of the right-of-way would be required near MP 165 in Schenectady County. However, the proposed realignment will not directly impact community facilities at this location.

At MP 168, Vedder Cemetery is mapped just north of the railroad. Although Alternative 110 extends outside of the right-of-way to the west of this point to connect to the Selkirk Branch, the proposed third track and maintenance service road is within the right-of-way immediately adjacent to the cemetery.

At MP 178.5 in Montgomery County, the realignment of Route 5 may be necessary to accommodate the third and fourth tracks and maintenance service road on the north side of the existing railroad. This realignment of the roadway may affect several properties fronting on Route 5 and adjoining streets (Mergner Road and Fort Johnson Avenue), including Old Fort Johnson, a historic site, and the Fort Johnson Fire Station. West of MP 186 in the village of Fonda, there is a post office building and the Fonda Municipal Building/Fire House that may be impacted by the construction of the new/relocated freight track and the maintenance service road.

In Onondaga County, the 110 Alternative passes close to a cemetery between MPs 289.8 and 290; however, impacts to the cemetery are not anticipated as all work within this area is contained within the rail right-of-way. New passenger tracks will be added south of the tracks in the areas adjoining Alliance Stadium, a minor league baseball stadium in Syracuse, but will not directly affect the facility as the work will be contained within the right-of-way.

In Monroe County, Alternative 110 passes close to the Rochester Medical Museum and Archives complex within the City of Rochester at MP 368.2, but no impacts to this facility are anticipated as all work is contained within the railway right-of-way. At approximate MP 371.8, Alternative 110 passes very close to the Frontier Field minor league baseball stadium, but no impacts are anticipated since all work is contained within the right-of-way at this facility as well.

In Genesee County, Alternative 110 passes close to the Christian Missionary Academy between MPs 400.5 and 401.5. In Erie County, Alternative 110 passes by three correctional institutions between

MPs 422 and 423. At MP 425, the alternative passes close to the Buffalo-Lancaster Airport. Although these facilities are in close proximity to the railroad, no direct impacts to these facilities are anticipated.

5.2.4 Alternative 125

Empire Corridor South

Roughly one mile of the proposed 125 mph track would extend south from Albany-Rensselaer Station to cross the Hudson River. The impacts to community facilities within this one mile stretch of the corridor are not anticipated.

Empire Corridor West/Niagara Branch

Alternative 125 would involve construction of a total of 236 miles of track on new alignment along three different segments: Rensselaer to Syracuse, Syracuse to Rochester, and Rochester to Buffalo. Alternative 125 also would include new right-of-way in most areas, but would merge back with the Empire Corridor over two 15- and 16-mile segments centered on Syracuse and Rochester, respectively.

This route covers 126 miles on new alignment between Rensselaer County and a point 8.5 miles east of Syracuse Station. Alternative 125 extends through urban areas in Albany and Schenectady Counties over a distance of 20 miles, following the New York State Thruway (I-87/I-90) over most of this distance. For the majority of this stretch of dedicated passenger rail corridor, no impacts to community facilities are anticipated as the proposed rail is located within the NYS Thruway right-of-way. However, there are several impacts to community facilities anticipated in this section as noted below.

In Schenectady County, Whispering Pines Golf Course at MP QH158 may be impacted by Alternative 125. Just before MP QH161, Alternative 125 passes through Holy Cross Cemetery and just south of St. Cyril Cemetery.

In Montgomery County, Alternative 125 passes through, and would impact, the Canajoharie Country Club at MP QH194. At MP QH198, it passes close to Hickory Acres Airport, but no impacts to this facility are anticipated.

In Herkimer County, Alternative 125 crosses Doty's Golf Course just west of MP QH218 between Forge Hill Drive (MP QH218.2) and County Road 14 (MP QH218.7) in the Town of German Flatts.

Just after crossing the Seneca Turnpike in Oneida County, Alternative 125 crosses through the northern corner of the Skenandoa Golf Club between MPs QH237.6 and QH237 and extends through the southwest corner of Westmoreland Golf Course between MPs QH238.7 and QH238.9 in the Town of Westmoreland.

In Madison County, Alternative 125 extends within close proximity to water supply facilities for the City of Oneida. Alternative 125 passes through Lenox Rural Cemetery just west of MP QH256, which would be impacted by this alternative. At approximate MP QH262.5, this alternative passes through a ballfield at the Bolivar Road School within the Town of Sullivan.

In Onondaga County, the alignment merges with the existing Empire Corridor. Just before the merge, between MPs QH267 and QH268, Alternative 125 may impact the Old Oak Golf Club within the Town of Manlius as the rail passes just north of the golf course. Alternative 125 extends through 16 miles of urban area surrounding the City of Syracuse. Depending on the design of the elevated railroad structure over the existing railroad, there may be right-of-way impacts, the extent of which would be determined in Tier 2. Just before Alternative 125 diverges from the existing Empire Corridor again, the rail passes near Most Holy Rosary Cemetery, but since this is on the existing Empire Corridor and within the existing right-of-way, no impacts to the cemetery are anticipated.

At MP QH284, Alternative 125 diverges from the existing Empire Corridor and continues on a new alignment 61 miles west to a point 11 miles east of Rochester Station in Monroe County. Alternative 125 passes directly through and would impact Camillus Airport between MPs QH284.5 and QH285 in Onondaga County. Alternative 125 passes directly north of the tourist information center and rest stop on the New York State Thruway (I-90), but no impacts to this facility are anticipated.

In Monroe County, near the border with Wayne County at MP QH343, Alternative 125 would pass through the southwest corner of Perinton Golf and Country Club at Macedon Center Road and may impact this facility. Alternative 125 merges with the existing Empire Corridor at MP QH346, continuing on the existing corridor through areas outside of Rochester and through the downtown area. Depending on the design of the elevated railroad structure over the existing railroad, there may be right-of-way impacts, the extent of which would be determined in Tier 2. Alternative 125 diverges again at MP QH361, 5.5 miles west of Rochester Station, to continue on new alignment 52 miles west to Buffalo in Erie County.

In Erie County, Alternative 125 passes through Clarence Fillmore Cemetery just beyond MP QH408. Just past MP QH413, as the new rail corridor rejoins the Empire Corridor, Alternative 125 passes the Walden Golf Driving Range to the north, but no impacts to this facility are anticipated. Depending on the design of the elevated railroad structure over the existing railroad extending to the Buffalo Exchange Street Station, there may be right-of-way impacts, the extent of which would be determined in Tier 2.

In Niagara County, Alternative 125 passes along the northeast edge of the Niagara International Airport between MPs QDN21 and QDN23. Between MPs QDN23 and QDN25, Alternative 125 passes near Niagara Town Hall, Niagara Town Court, Niagara Active Hose Company House, and the Niagara Presbyterian Church; however, impacts to these facilities, including the airport, are not anticipated.

6. Surface Waterbodies and Watercourses

6.1 Existing Conditions

6.1.1 Empire Corridor South

The existing surface waterways in the study area are described in the following section, identifying impaired waters, and the NYSDEC water quality classifications are shown in Exhibit G-5. Exhibit G-6 summarizes crossings of waterways by county and by status (impaired or protected waterway). The Empire Corridor South segment, from New York City to Rensselaer, extends 142 miles and in many locations closely follows the east bank of the Hudson River. This program segment includes the study area counties of New York County (Manhattan Borough), Bronx County, Westchester County, Putnam County, Dutchess County, Columbia County, and Rensselaer County. The entire corridor in this

segment is located in the Lower Hudson River watershed.

The rail corridor extends approximately 10.25 miles north through **Manhattan (New York County)** from its southern terminus, daylighting from a rail tunnel just north of Milepost 5. The Hudson River is generally within 150 to 300 feet of the western side of the railroad for the majority of the county. The entire length of the Hudson River in New York County is listed as an impaired water. Just before leaving New York County, the railroad crosses the Harlem River (also known as Spuyten-Duyvil Creek) at a swing-span bridge north of Milepost 10 and just east of the outlet into the Hudson River, before entering Bronx County. The Harlem River is listed as an impaired water by the NYSDEC at this crossing.

After crossing the Harlem River, the rail corridor enters and extends through **Bronx County** a distance of approximately 2.6 miles. There are no waterway crossings in Bronx County, however, the corridor closely adjoins the west bank of the Hudson River throughout the county.

The railroad continues to closely adjoin the Hudson River through 31.5 miles of the rail corridor as it extends through **Westchester County**, largely remaining within 50 to 500 feet of the river. The majority of the rail corridor remains in close proximity to the Hudson River, with the exception of a 1-mile section north of Tarrytown (MPs 25 to 26), another 1-mile section at Croton Point (MPs 33 to 34) that includes the Croton-Harmon Station, north of the Croton Bay crossing, and a roughly 5-mile section between the crossing of Furnace Brook and Peekskill.

There are approximately 23 waterway crossings in Westchester County, including a crossing of the Saw Mill River, a protected water, south of Yonkers Station, and Croton Bay, both a protected and impaired waterway. Of these river crossings, 18 are protected waters (Class C(t) or B or above), and 11 are impaired 303(d) waters. The protected and impaired streams include Kemmeys Cove/Sparta Brook (MP 29.5), Croton Bay (MPs 32.5 to 33, a U.S. Coast Guard permitted Metro-North Bridge), and five unnamed streams (MPs 24, 28.5, 31, 37.5, and 40.5). The protected streams include Saw Mill River (MP 15), Wickers Creek North (MP 21), Gory Brook (MP 26.5), Brinton Brook (MP 36), Furnace Brook (MP 37), Peekskill Bay (MP 42, a U.S. Coast Guard permitted Metro-North Bridge), Broccy Creek (MP 44), and five other unnamed streams (MPs 19.5, 23, 27, 34.5, and 43). Impaired waterways include Dickey Brook, Broccy Creek, and two unnamed streams (MPs 25 and 29).

The railroad continues to closely adjoin the Hudson River through 9.3 miles of the rail corridor as it extends through **Putnam County**, largely remaining within 50 to 500 feet of the river. The majority of the rail corridor remains in close proximity to the Hudson River, with the exception of a 1-mile section south of Cold Springs (MPs 51 to 52), where the Hudson River meanders about ¾-mile to the west of the rail corridor before extending in close proximity to the railroad at Foundry Cove (MP 52).

There are approximately 12 waterway crossings in Putnam County, including several bridges over the inlets and coves of the Hudson River (MP 51, MP 52 [Foundry Cove], and MP 53). Of these 12 crossings, 11 are protected waters (Class C(t) or B or above), and nine are impaired 303(d) waters. The protected and impaired streams include Copper Mine Brook (MP 47), Arden Brook (MP 49.5), Hudson River (MPs 51 and 53), Breakneck Brook (MP 54), and four unnamed streams (MPs 45.5, 47.5, 48 and 48.5). Other protected streams include Foundry Cove (MP 52) and one unnamed stream (MP 46).

The railroad traverses approximately 45.6 miles across **Dutchess County**. The majority of the railroad is within 50 to 300 feet of the Hudson River and crosses several coves and inlets of the river

Exhibit G-5— NYSDEC Surface Water Quality Classifications

Water Quality Class	Designated Uses
Marine Water Designations	
SA	The best usages of these waters are shellfishing for market purposes, primary and secondary contact recreation and fishing. These waters shall be suitable for fish, shellfish, and wildlife propagation and survival.
SB	The best usages of these waters are primary and secondary contact recreation and fishing. These waters shall be suitable for fish, shellfish, and wildlife propagation and survival.
I	The best usages of these waters are secondary contact recreation and fishing. These waters shall be suitable for fish, shellfish, and wildlife propagation and survival.
SC	The best usage for these waters is fishing. These waters shall be suitable for fish, shellfish, and wildlife propagation and survival. The water quality is suitable for primary and secondary contact recreation, although other factors may limit the use for these purposes.
Surface Water Designations	
A-S	The best usages for these waters are: source of water supply for drinking, culinary or food processing purposes; primary and secondary contact recreation; and fishing. The water quality is suitable for fish propagation and survival. This classification is for international boundary waters.
A	The best usages for these waters are the same as for Class/Standard A-S.
B	The best usages for these waters are for primary and secondary contact recreation and fishing. The water quality is suitable for fish propagation and survival.
C	The best usage for these waters is fishing. Water quality is suitable for fish propagation and survival. The water quality is suitable for primary and secondary contact recreation, although other factors may limit the use for these purposes.
C(t)	The best usage for these waters is fishing. The water quality is suitable for trout propagation and survival. Water quality is suitable for primary and secondary contact recreation, although other factors may limit the use for these purposes.
C(ts)	The best usage for these waters is the same as for Class C(t) and is also suitable for trout spawning.

as it passes through the county. The entire Hudson River is listed as an impaired waterway in Dutchess County. There are two areas in Dutchess County where the Hudson River is outside of the railroad's 300-foot buffer: a 1-mile section through the town of Poughkeepsie (MPs 72 to 73), and a roughly 2-mile section through the small hamlet of Staatsburg in the Town of Hyde Park (MPs 83 to 85).

There are approximately 38 waterway crossings in this county, including several tributaries of the Hudson River (MPs 58, 66, 69, 71.5, 77, 85-86, 87, 90, 91, 93.5, 95.5-97 and 98). Of the 38 crossings, 34 are protected waters (Class C(t) or B or above), and 28 are impaired 303(d) waters. The protected and impaired streams include Cascade Brook (MP 56), Gordons Brook/Melzingha Brook (MP 56.5), Hudson River (MPs 66, 69, 77, 87, 90 and 93.5), Casper Creek/Tributary to Cobalt Lake (MP 67), Crum Elbow Creek (MP 79.5), Bard Rock Creek (MP 80.5), Indian Kill (MP 83), Mudder Kill (MP 94.5), South Bay of Hudson River (MPs 95.5 to 97), North Bay of Hudson River (MP 98), and eleven unnamed streams (MPs 61, 63, two at 74.5, 75.5, 81.5, 87.5, 89.5, 90.5, 92.5, and 94). The protected streams include Fishkill Creek/Hudson River (MP 58), Wappinger Creek (MP 65, also known as the New Hamburg Railroad Bridge), Maritje Kill (MP 77), Vandenburg Cove (MPs 85 to 86), Astor Cove (MP 91), and three unnamed streams (two at MP 55.5 and MP 60). Impaired waterways include Casper Creek/Tributary to Cobalt Lake, Fall Kill Creek (MP 73.5), and North Staatsburg Creek (MP 84.5).

The railroad continues to closely adjoin the Hudson River through the majority of the 29.5 miles of

the rail corridor as it extends through **Columbia County**, largely remaining within 50 to 300 feet of the river. The majority of the rail corridor remains in close proximity to the Hudson River, with the exception of two areas: a 3-mile section between the towns of Newton Hook and Stuyvesant (MPs 121 to 124), where the Hudson River meanders about ¼-mile to the west of the rail corridor before extending in close proximity to the railroad at just before the town of Stuyvesant, and a 1-mile section between MP 126 and MP 127 where, again the Hudson River meanders to the west about ¼ -mile from the rail corridor.

There are approximately 22 waterway crossings in Columbia County, including several bridges over the inlets of the Hudson River. Of the 22 crossings, 14 are protected waters (Class C(t) or B or above), and 19 are impaired 303(d) waters. The protected streams include the Hudson River (at least four crossings at MPs 105, 106, 117.5 and 120), which is also an impaired water. Protected and impaired waters include Roeliff Jensen Kill (MP 108), North Bay of the Hudson, and eight unnamed tributaries of the Hudson River (MPs 103.5, 104.5, 107.5, 109.5, 112, 114, 118 and 123.5). Impaired waterways include the Foxes Creek (MP 109), North Bay of the Hudson River (MPs 115-116.5), Mill Creek (MP 126), and three unnamed streams (MPs 121.5, 126.5 and 127.5).

All of the Build Alternatives follow the existing Empire Corridor South for the majority of its length, deviating only in **Rensselaer County**, where Alternative 125 splits off 1.6 miles south of where the existing Empire Corridor turns to the west. The rail corridor continues to closely border the Hudson River through the southern portion of Rensselaer County, but as it approaches Castleton-on-Hudson (MPs 134 to 135), the railroad moves inland and runs parallel to, but further east of, the Hudson River bank. To the north, the river remains outside of the 300-foot buffer study area, extending up to approximately a half-mile away from the river in certain areas. Approximately one mile north of Albany-Rensselaer Station, the existing Empire Corridor (90/110 Study Area) crosses the Hudson River into Albany County at the Livingston Avenue Bridge. There are approximately 10 waterway crossings along the 13.4 miles within the existing Empire Corridor (90/110 Study Area) in Rensselaer County. Of the 10 crossings, none are protected waters (Class C(t) or B or above), and seven are impaired 303(d) waters. The impaired streams include Muitzes Kill (MP 133), Papscanee Creek (MPs 136 and 139), Mill Creek (MP 141.5) and three unnamed streams (MPs 129, 131 and 142.5). The Hudson River is also an impaired water way adjacent to the railroad in this county.

Nearing the county line, the 125 Study Area would cross the Hudson River at MP QH143.5 on a new bridge structure. There are approximately nine waterway crossings in Rensselaer County along the 125 Study Area. Of the nine crossings, none are protected waters (Class C(t) or B or above), and six are impaired 303(d) waters. The impaired streams include Muitzes Kill (MP 133), Papscanee Creek (MPs 136 and 139), Mill Creek (MP QH142.5), and two unnamed streams (MPs 129 and 131). The Hudson River is also an impaired waterway adjacent to the railroad in this county.

Exhibit G-6—Empire Corridor South Surface Water Crossings (for both 90/110 and 125 Study Areas unless otherwise noted)

County (Appx. Mile Post)	River/Stream Crossing (Appx. Mile Post)	Name	Impaired (303(d))/ Priority Water	Protected
New York (0-11.5)	10	Harlem River	Y (MS4)	N
Bronx (11.5-14)	none	NA	NA	NA

Exhibit G-6—Empire Corridor South Surface Water Crossings (for both 90/110 and 125 Study Areas unless otherwise noted)

County (Appx. Mile Post)	River/Stream Crossing (Appx. Mile Post)	Name	Impaired (303(d))/ Priority Water	Protected
Westchester (14-45)	15	Saw Mill River	Y (MS4)	Y
	19.5	Unnamed Tributary to the Hudson River	N	N
	21	Wickers Creek North	N	Y
	22.5	Barney Brook	N	N
	23	Unnamed Tributary to the Hudson River	N	Y
	24	Unnamed Tributary to the Hudson River	Y	Y
	25	Unnamed Tributary to the Hudson River	Y	Y
	26.5	Gory Brook	N	Y
	27	Unnamed Tributary to the Hudson River	N	Y
	28.5	Unnamed Tributary to the Hudson River	Y	Y
	29	Unnamed Tributary to the Hudson River	Y	Y
	29.5	Kemmeys Cove/Sparta Brook	Y	Y
	31	Unnamed Tributary to the Hudson River	Y	N
	32.5-33	Croton Bay	Y	Y
	34.5	Unnamed Tributary to the Hudson River	N	Y
	36	Brinton Brook	N	Y
	37	Furnace Brook	N	Y
	37.5	Unnamed Tributary to the Hudson River	Y	N
	40	Dickey Brook	Y	N
	40.5	Unnamed Tributary to the Hudson River	Y	Y
	42	Peekskill Bay	N	Y
	43	Unnamed Tributary to the Hudson River	N	Y
	44	Broccy Creek	Y	Y
Putnam (45 -54.5)	45.5	Unnamed Tributary to the Hudson River	Y	Y
	46	Unnamed Tributary to the Hudson River	N	Y
	47	Copper Mine Brook	Y	Y
	47.5	Unnamed Tributary to the Hudson River	Y	Y
	48	Unnamed Tributary to the Hudson River	Y	Y
	48.5	Unnamed Tributary to the Hudson River	Y	Y
	49.5	Arden Brook	Y	Y
	51	Hudson River	Y	Y
	52	Foundry Cove	N	Y
	53	Hudson River	Y	Y
	54	Breakneck Brook	Y	Y
	54.5	Catskill Aqueduct	N	N
Dutchess (54.5-75/76-100.5)	55.5	Unnamed Tributary to the Hudson River	N	Y
	55.5	Unnamed Tributary to the Hudson River	N	Y
	56	Cascade Brook	Y	Y
	56.5	Gordons Brook/Melzingha Brook	Y	Y
	58	Fishkill Creek/Hudson River	N	Y
	60	Unnamed Tributary to the Hudson River	N	Y
	61	Unnamed Tributary to the Hudson River	Y	Y
	63	Unnamed Tributary to the Hudson River	Y	Y
	65	Wappinger Creek	N	Y
	66	Hudson River	Y	Y
	66.5	Unnamed Tributary to the Hudson River	N	N
	67	Casper Creek/Tributary to Cobalt Lake	Y	Y
	69	Hudson River	Y	Y
	71.5	Sunfish Cove	N	N
	73.5	Fall Kill Creek	Y (C), (MS4)	N
	74.5	Unnamed Tributary to the Hudson River	Y	Y
	74.5	Unnamed Tributary to the Hudson River	Y	Y
	75.5	Unnamed Tributary to the Hudson River	Y	Y
	77	Maritje Kill	N	Y
	77	Hudson River/Franklin D Roosevelt Home Pond	Y	Y
	79.5	Crum Elbow Creek	Y	Y
	80.5	Bard Rock Creek	Y	Y
	81.5	Unnamed Tributary to the Hudson River	Y	Y

Exhibit G-6—Empire Corridor South Surface Water Crossings (for both 90/110 and 125 Study Areas unless otherwise noted)

County (Appx. Mile Post)	River/Stream Crossing (Appx. Mile Post)	Name	Impaired (303(d))/ Priority Water	Protected
	83	Indian Kill	Y	N
	84.5	North Staatsburg Creek	N	Y
	85-86	Vandenburg Cove	Y	Y
	87	Hudson River	Y	Y
	87.5	Unnamed Tributary to the Hudson River	Y	Y
	89.5	Unnamed Tributary to the Hudson River	Y	Y
	90	Hudson River/Pond	Y	Y
	90.5	Unnamed Tributary to the Hudson River	N	Y
	91	Astor Cove	Y	Y
	92.5	Unnamed Tributary to the Hudson River	Y	Y
	93.5	Unnamed/Hudson River	Y	Y
	94	Unnamed Tributary to the Hudson River	Y	Y
	94.5	Mudder Kill	Y	Y
	95.5-97	South Bay of Hudson River	Y	Y
	98	North Bay of Hudson River	Y	Y
Columbia (100.5-129.5)	103.5	Unnamed Tributary to the Hudson River	Y	Y
	104.5	Unnamed Tributary to the Hudson River	Y	Y
	105	Hudson River	Y	Y
	106	Hudson River and Unnamed Pond	Y	Y
	107.5	Unnamed Tributary to the Hudson River	Y	Y
	108	Roeliff Jensen Kill	Y	Y
	109	Foxes Creek	Y	N
	109.5	Unnamed/Hudson River	Y	Y
	112	Unnamed Tributary to the Hudson River	Y	Y
	114	Unnamed Tributary to the Hudson River	Y	Y
	115-116.5	North Bay of Hudson River	Y	Y
	117.5	Hudson River	Y	Y
	118	Unnamed Tributary to the Hudson River	Y	Y
	118.5	Stockport Creek	N	N
	120	Hudson River	Y	Y
	121.5	Unnamed Tributary to the Hudson River	Y	N
	122.5	Unnamed Pond	N	N
	123	Unnamed Pond	N	N
	123.5	Unnamed Tributary to the Hudson River	Y	Y
	126	Mill Creek	Y	N
	126.5	Unnamed Tributary to the Hudson River	Y	N
	127.5	Unnamed Tributary to the Hudson River	Y	N
Rensselaer (129.5-143)	129	Unnamed Tributary to the Hudson River	Y	N
	129.5	Unnamed Tributary to the Hudson River	N	N
	131	Unnamed Tributary to the Hudson River	Y	N
	133	Muitzes Kill	Y	N
	134	Vlockie Kill	N	N
	135	Moordener Kill	N	N
	136	Papscanee Creek	Y	N
	139	Papscanee Creek	Y	N
	141.5 (90/110 mph only)	Mill Creek	Y	N
	142.5 (90/110 mph only)	Unnamed Tributary to the Hudson River	Y	N
	QH 142.5 (125 mph only)	Mill Creek	Y	N

Notes: Appx. = Approximate, NA = Not Applicable, Y = Yes, N = No

(C) = 303(d) segments impaired by pollutants related to construction, as specified in Appendix E of the NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity (Permit No. GP-0-10-001), January 29, 2010.

(MS4) = 303(d) segments impaired by pollutants of concern for municipal separate storm sewer systems (MS4s), as specified in Appendix 2 of the SPDES General Permit for Stormwater Discharges from MS4s (Permit No. GP-0-10-002), October 14, 2011.

The 90/110 Study Area is used for analysis of Alternatives 90A, 90B, and 110 and consists of the existing 464-mile long Empire Corridor alignment. The 125 Study Area is used for analysis of Alternative 125 and consists of portions of the existing Empire Corridor and new alignment and is 450 miles long. The study area width is defined as being within 300 feet of the corridor centerline.

Source: NY GIS Clearinghouse, 2011; NYSDEC GIS Data, 2011

6.1.2 Empire Corridor West/Niagara Branch: 90/110 Study Area

The Empire Corridor West/Niagara Branch (90/110 Study Area) extends a distance of 322 miles through 13 counties. The Empire Corridor West generally follows or parallels several geographic features, including the Mohawk River or New York Canal System, and the New York State Thruway. The Niagara Branch turns north at Buffalo on Lake Erie, generally paralleling the Lake Erie shoreline and then extending north along the Niagara River. Exhibit G-7 summarizes crossings of waterways by county and by status (impaired or protected waterway).

The railroad crosses over the Hudson River (MP 143) at the Livingston Avenue Bridge where it enters Albany, approximately one mile north of the Albany-Rensselaer Station. The city of Albany sits on the west bank of the Hudson River approximately 150 miles north of New York City. The railroad traverses approximately 11.8 miles across **Albany County**, extends across four waterways at nine crossings. Of the four waterways, two are protected waters (Class C(t) or B or above), and three are impaired 303(d) waters. The protected and impaired streams include Patroons Creek (six crossings at MPs 144, 145, 146, 147, 148 and 149) and Lisha Kill (MP 154). Impaired waterways include the Hudson River (MP 143). The southeastern portion of Albany County is within the Lower Hudson River watershed, but just after the railroad crosses Rensselaer Lake (MP 149), there is a transition to the Mohawk River watershed. Therefore, Lisha Kill is the only crossing of a water body in the Mohawk River watershed within Albany County.

The entire 14.7 miles of the Empire Corridor that pass through **Schenectady County** are located within the Mohawk River watershed. The Mohawk River/Erie Canal cross the railroad just west of the Schenectady Station (MP 160). West of this crossing, the Mohawk River/Erie Canal meanders along the south side of the railroad throughout the remainder of the county at distances between 75 feet to 1 ¼-miles from the railroad.

There are approximately nine waterway crossings in Schenectady County. Of the nine crossings, two are protected waters (Class C(t) or B or above), and all are impaired 303(d) waters. The protected and impaired streams include the Mohawk River/Erie Canal and an unnamed tributary of the Mohawk River (MPs 161 to 164.5). Impaired waterways include the Collins Creek (MP 161), Washout Creek (MP 166), Verf Kill (MP 168), Chaughtanoonda Creek (MP 169.5), and four unnamed tributaries of the Mohawk River (MPs 158 to 158.5, 161 to 164.5 and two at MP 168.5).

The railroad continues to closely adjoin the north bank of the Mohawk River/Erie Canal through the 40.3 miles of **Montgomery County**, largely remaining within 50 to 1,000 feet of the river/canal. The entire county remains within the Mohawk River watershed. There are approximately 35 waterway crossings in this county, all of which are tributaries to the Mohawk River. Of the 35 crossings, ten are protected waters (Class C(t) or B or above), and all are impaired 303(d) waters. The protected streams include McQueen Creek (MP 178.75), Briggs Run (MP 190.5), Knauderack Creek (MP 193.5), Zimmerman Creek (MP 207), Timmerman Creek (MP 207.5), Crum Creek (MP 209.5) and four unnamed tributaries of the Mohawk River (three between MPs 180 to 181 and MP 202.5).

Impaired waterways in **Montgomery County**, in addition to the streams above, include Compaanen Kill (MP 170.5), Cranes Hollow Creek (MP 172.5), Degraff Creek (MP 174), North Chuctanunda (MP 176), Danascara Creek (MP 183), Cayadetta Creek (MP 186.5), Caroga Creek (MP 203.5), Mother Creek (MP 204), and 17 other unnamed tributaries to the Mohawk River (MPs 172, 174.5, 177.5, 178.5, 185, 187.5, 188, 194.5, 196, 197, 198, 199, three between MPs 201 to 202, 205 and 206).

The railroad traverses through **Herkimer County** for approximately 25.3 miles, extending parallel and close to the Mohawk River/Erie Canal. The Mohawk River/Erie Canal continues to parallel the south side of the railroad until the town of Frankfurt (MP 228.5), where the Mohawk River separates from the Erie Canal and extends further south. The Erie Canal crosses the railroad at roughly MP 231.5 and the Mohawk River crosses further west at roughly MP 234. Both waterways remain north of the railroad (until Oneida County), west of these crossings.

There are approximately 19 waterway crossings in Herkimer County. Of the 19 crossings, four are protected waters (Class C(t) or B or above), and all are impaired 303(d) waters. The protected streams include East Canada Creek (MP 210), Beaver Brook (MP 220), West Canada Creek (MP 223) and Ferguson Creek (MP 234.5). In addition to the above-mentioned crossings, impaired waterways include the Bridenbecker Creek (MP 229.5), the Erie Canal (MP 231.5), Mohawk River (MP 234) and 12 unnamed tributaries of the Mohawk River (nine between MPs 211 to 219.5 and three between MPs 223 to 229).

The Empire Corridor extends 28.6 miles through **Oneida County**, paralleling the Erie Canal between Utica and Rome, where the canal diverges west to flow into Oneida Lake. The eastern half of Oneida County is within the Mohawk River watershed, but west of the Rome Station (MP 261.5) is the drainage divide with the Oswego River/Finger Lakes watershed. There are approximately 12 waterway crossings in this county, of which four are protected waters (Class C(t) or B or above) and all are impaired 303(d) waters. The protected streams include Starch Factory Creek (MP 235.5), Sauquoit Creek (MP 240.5), Oriskany Creek (MP 244.5) and the Mohawk River (MP 248.5). In addition to the above-mentioned crossings, impaired waterways also include Mad Creek (MPs 256 to 256.5), Stony Creek (MP 261) and five unnamed tributaries to Wood Creek between MPs 250.5 and 255.

The railroad extends 13.8 miles through **Madison County**, which is situated entirely within the Oswego River/Finger Lakes watershed. In the eastern half of the county, the railroad generally parallels the Old Erie Canal, within 100 to 1,000 feet to the south. At MP 272, the Old Erie Canal flows under the railroad, extending south and out of the study area. There are approximately 11 waterway crossings in this county. Of the 11 crossings, four are protected waters (Class C(t) or B or above), and all are impaired 303(d) waters. The protected streams include Oneida Creek (MP 264), Canastota Creek (MP 270), Old Erie Canal/Owlville Creek (MP 272) and Chittenango Creek (MP 276.5). In addition to the above-mentioned crossings, impaired waterways also include Cowaselon Creek (MP 266), Duck Settlement Creek (MPs 268 to 268.5), Canaseraga Creek (MP 273.5) and four unnamed streams (MPs 274, 275, 277 and 278).

The railroad extends 31.3 miles through **Onondaga County**, roughly paralleling the New York State Thruway and skirting the southeast shores Onondaga Lake in the city of Syracuse. There are approximately 16 waterway crossings in this county and all are within the Oswego River/Finger Lakes watershed. Of the 16 crossings, four are protected waters (Class C(t) or B or above), and 13 are impaired 303(d) waters. The protected streams include Lake Brook (MP 280.5), Dead Creek/White Bottom Creek (MP 303.5), Carpenters Brook (MP 305.5) and Skaneateles Creek (MP 308). In addition to the above-mentioned crossings, impaired waterways also include Pools Brook (MP 278.5), Limestone Creek (MP 282.5), Butternut Creek (MP 285), South Branch Ley Creek (MP 287), Erie Canal (MP 292), Geddes Brook (MP 295) and three unnamed streams (MPs 281, 288 and 308.5). Three other streams, none of which are protected or impaired, cross the railroad in this county: Nine Mile Creek (MP 296.5), Bitter Brook (MP 302) and the Old Erie Canal (MPs 302.5 to 303).

The Empire Corridor extends 11.5 miles through **Cayuga County**, roughly paralleling the New York State Thruway. There are approximately five waterway crossings in this county and all are within the Oswego River/Finger Lakes watershed. Of the five crossings, none are protected waters (Class C(t) or B or above), and all are impaired 303(d) waters. Impaired waterways include Putnam Brook (MP 312), Spring Brook (MP 312.5), Owasco Outlet (MP 316), Swamp Brook (MP 316.5) and the Seneca River (MP 319.5).

The railroad extends 37.1 miles through **Wayne County**, paralleling portions of the Erie Canal and Route 31. The Erie Canal meanders back and forth along the railroad for much of the county, crossing the rail corridor east of the town of Lyons (MP 335) and east of the town of Newark (MP 339.5). Approximately 98 percent of the railroad is located within the Oswego River/Finger Lakes watershed in Wayne County. Just before the western border of the county, the railroad enters the Lake Ontario Tributaries watershed (MP 357).

There are approximately 18 waterway crossings in this county, including the two Erie Canal crossings mentioned above. Of the 18 crossings, five are protected waters (Class C(t) or B or above), and all are impaired 303(d) waters. The protected streams include Canandaigua Creek (MP 336), Marletown Creek/tributaries (MPs 327 to 329), Ganargua Creek (MPs 342 to 347), Red Creek (MPs 351 to 352) and an unnamed tributary to the Erie Canal (MPs 354.5 to 355). In addition to the above-mentioned crossings, impaired waterways also include the Seneca River (MP 320), Black Creek (MPs 324 and 325), the Old Erie Canal (MP 326.5), Clyde River (MPs 328 to 330), Black Brook/Old Erie Canal (MP 332), Erie Canal and five unnamed streams (two at MP 322; MPs 323, 325.5, 341 and 345).

The railroad extends 30.9 miles through **Monroe County**, closely paralleling the Erie Canal from the county's eastern county line to west of the town of Fairport (MP 361.5), where the canal meanders south. The canal extends within the study area again west of the city of Rochester and crosses the railroad just east of Interstate 390 (MP 374.5), extending north out of the study area (until Niagara County). The eastern portion the county remains in the Lake Ontario Tributaries watershed, and the drainage divide with the Genesee River watershed (MP 370.5), is just east of Rochester and the Genesee River crossing (MP 371.5).

There are approximately 19 waterway crossings in Monroe County, including the Erie Canal crossing mentioned above. Of the 19 crossings, six are protected waters (Class C(t) or B or above), and 13 are impaired 303(d) waters. The protected streams include Thomas Creek (MPs 359.5 to 362), Irondequoit Creek (MP 363), Allen Creek (MP 365.5), Genesee River, Erie Canal and Little Black Creek (MP 377.5). In addition to the above-mentioned crossings, impaired waterways also include an additional crossing of Irondequoit Creek (MP 367.5) and nine unnamed streams (MP 379, six between MPs 380.5 to 383.5 and two between MPs 385 to 385.5).

The railroad traverses approximately 30 miles through **Genesee County**, generally following Route 33. The railroad remains in the Genesee River watershed through the eastern portion of the county and passes into the Niagara River/Lake Erie watershed east of the town of Batavia (MP 401). There are approximately 17 waterway crossings in Genesee County. Of the 17 crossings, four are protected waters (Class C(t) or B or above), and 13 are impaired 303(d) waters. The protected streams include Bigelow Creek/Godfrey Pond (MP 398.5), Tonawanda Creek (MP 403.5) and two unnamed streams (MPs 399.5 and 407). In addition to the above-mentioned crossings, impaired waterways also include Robins Brook (MPs 392.5 and 394), Black Creek (MP 396.5), Bowen Creek (MP 408.5), Murder Creek (MP 414), and seven unnamed streams (MPs 389, 395, 401, 412, 415, 416 and 417.5). The railroad also crosses an unnamed pond in Genesee County (MP 402), which is neither protected nor impaired.

The railroad extends 32.7 miles through **Erie County**, which is situated entirely within the Niagara River/Lake Erie watershed. The eastern segment follows Route 33, then Route 130 to the city of Buffalo, a distance of 20 miles. The Niagara Branch of the railroad turns north to follow the Lake Erie shoreline and then follows Route 265 north, roughly parallel to, and within 50 feet to 2.5 miles east of, the Niagara River, for a distance of 12.7 miles. Of the seven waterway crossings in this county, three are protected waters (Class C(t) or B or above), and six are impaired 303(d) waters. The protected and impaired waters include Ellicott Creek (MP 422.5), Scajaquada Creek (MP QDN6), and an unnamed tributary to Ellicott Creek (MP 418.5). The other impaired waterways include Ellicott Creek (MP QDN12.5), the North Branch of Plum Bottom Creek (MP 425.5), and one other unnamed stream (MP QDN7.5).

The railroad extends 14.4 miles through **Niagara County** within the Niagara River/Lake Erie watershed. The railroad follows the shoreline of the Niagara River, then extends north towards the Niagara Falls International Airport, turning west to terminate at Niagara Falls. Of the nine waterway crossings in the county, none are protected waters (Class C(t) or B or above), and eight are impaired 303(d) waters. The impaired waterways include Tonawanda Creek/Erie Canal (MP QDN13.5), Black Creek (MP QDN18), East Branch of Black Creek (MP QDN18.5), Sawyer Creek (MP QDN19.5), Bergholtz Creek (MP QDN20), Cayuga Creek (MP QDN21), Branch Gill Creek (MP QDN25) and Gill Creek (MP QDN26).

Exhibit G-7—Empire Corridor West/Niagara Branch Surface Water Crossings in the 90/110 Study Area

County (Appx. Mile Post)	River/Stream Location (Mile Post)	Name	Impaired (303(d))/ Priority Water	Protected
Albany (143-155)	143	Hudson River	Y	N
	144, 145, 146, 147, 148, 149	Patroons Creek	Y	Y
	149	Rensselaer Lake	N	N
	154	Lisha Kill	Y	Y
Schenectady (155-170/42)	158-158.5	Unnamed Tributary to Mohawk River	Y	N
	160	Mohawk River/ Erie Canal	Y	Y
	161	Collins Creek	Y	N
	161-164.5	Unnamed Tributary to Mohawk River	Y	Y
	166	Washout Creek	Y	N
	168	Verf Kill	Y	N
	168.5	Unnamed Tributary to Mohawk River	Y	N
	168.5	Unnamed Tributary to Mohawk River	Y	N
Montgomery (170/42-210)	169.5	Chaughtanoonda Creek	Y	N
	170.5	Compaaenen Kill	Y	N
	172	Unnamed Tributary to Mohawk River	Y	N
	172.5	Cranes Hollow Creek	Y	N
	174	Degraff Creek	Y	N
	174.5	Unnamed Tributary to Mohawk River	Y	N
	176	North Chuctanunda	Y	N
	177.5	Unnamed Tributary to Mohawk River	Y	N
	178.5	Unnamed Tributary to Mohawk River	Y	N
	178.75	McQueen Creek	Y	Y

Exhibit G-7—Empire Corridor West/Niagara Branch Surface Water Crossings in the 90/110 Study Area

County (Appx. Mile Post)	River/Stream Location (Mile Post)	Name	Impaired (303(d))/ Priority Water	Protected
	180	Unnamed Tributary to Mohawk River	Y	Y
	180.5	Unnamed Tributary to Mohawk River	Y	Y
	181	Unnamed Tributary to Mohawk River	Y	Y
	183	Danascara Creek	Y	N
	185	Unnamed Tributaries to Mohawk River	Y	N
	186.5	Cayadetta Creek	Y	N
	187.5	Unnamed Tributary to Mohawk River	Y	N
	188	Unnamed Tributary to Mohawk River	Y	N
	190.5	Briggs Run	Y	Y
	193.5	Knauderack Creek	Y	Y
	194.5	Unnamed Tributary to Mohawk River	Y	N
	196	Unnamed Tributary to Mohawk River	Y	N
	197	Unnamed Tributary to Mohawk River	Y	N
	198	Unnamed Tributary to Mohawk River	Y	N
	199	Unnamed Tributary to Mohawk River	Y	N
	201	Unnamed Tributary to Mohawk River	Y	N
	201.5	Unnamed Tributary to Mohawk River	Y	N
	202	Unnamed Tributary to Mohawk River	Y	N
	202.5	Unnamed Tributary to Mohawk River	Y	Y
	203.5	Caroga Creek	Y	N
	204	Mother Creek	Y	N
	205	Unnamed Tributary to Mohawk River	Y	N
	206	Unnamed Tributary to Mohawk River	Y	N
	207	Zimmerman Creek	Y	Y
	207.5	Timmerman Creek	Y	Y
	209.5	Crum Creek	Y	Y
Herkimer (210-235)	210	East Canada Creek	Y	Y
	211	Unnamed Tributary to Mohawk River	Y	N
	212.5	Unnamed Tributary to Mohawk River	Y	N
	213.5	Unnamed Tributary to Mohawk River	Y	N
	214	Unnamed Tributary to Mohawk River	Y	N
	215	Unnamed Tributary to Mohawk River	Y	N
	216	Unnamed Tributary to Mohawk River	Y	N
	217	Unnamed Tributary to Mohawk River	Y	N
	217.5	Unnamed Tributary to Mohawk River	Y	N
	219.5	Unnamed Tributary to Mohawk River	Y	N
	220	Beaver Brook	Y	Y
	223	West Canada Creek	Y	Y
	223	Unnamed Tributary to Mohawk River	Y	N
	224.5	Unnamed Tributary to Mohawk River	Y	N
	229	Unnamed Tributary to Mohawk River	Y	N
	229.5	Bridenbecker Creek	Y	N
	231.5	Erie Canal	Y	N
	234	Mohawk River	Y (MS4)	N
	234.5	Ferguson Creek	Y	Y
Oneida (235-264)	235.5	Starch Factory Creek	Y	Y
	240.5	Sauquoit Creek	Y	Y
	244.5	Oriskany Creek	Y	Y
	248.5	Mohawk River	Y (MS4)	Y
	250.5	Mohawk River	Y (MS4)	N
	251.5	Unnamed Tributary to Wood Creek	Y	N
	251.5	Unnamed Tributary to Wood Creek	Y	N
	252	Unnamed Tributary to Wood Creek	Y	N
	254.5	Unnamed Tributary to Wood Creek	Y	N
	255	Unnamed Tributary to Wood Creek	Y	N
	256-256.5	Mad Creek	Y	N
	261	Stony Creek	Y	N
Madison (264-278)	264	Oneida Creek	Y	Y
	266	Cowaselon Creek	Y	N
	268-268.5	Duck Settlement Creek	Y	N
	270	Canastota Creek	Y (MS4)	Y

Exhibit G-7—Empire Corridor West/Niagara Branch Surface Water Crossings in the 90/110 Study Area

County (Appx. Mile Post)	River/Stream Location (Mile Post)	Name	Impaired (303(d))/ Priority Water	Protected
	272	Old Erie Canal/Owlville Creek	Y	Y
	273.5	Canaseraga Creek	Y	N
	274	Unnamed Tributary to Canaseraga Creek	Y	N
	275	Unnamed Tributary to Canaseraga Creek	Y	N
	276.5	Chittenango Creek	Y	Y
	277	Unnamed Tributary to Chittenango Creek	Y	N
	278	Unnamed Tributary to Chittenango Creek	Y	N
Onondaga (278-309)	278.5	Pools Brook	Y	N
	280.5	Lake Brook	Y	Y
	281	Unnamed Tributary to Chittenango	Y	N
	282.5	Creek Limestone Creek	Y	N
	285	Butternut Creek	Y	N
	287	South Branch Ley Creek	Y (C), (MS4)	N
	288	Unnamed Tributary to Ley Creek	Y (C), (MS4)	N
	292	Erie Canal	Y	N
	295	Geddes Brook	Y	N
	296.5	Nine Mile Creek	Y (C), (MS4)	N
	302	Bitter Brook	N	N
	302.5-303	Old Erie Canal	N	N
	303.5	Dead Creek/White Bottom Creek	Y	Y
	305.5	Carpenters Brook	Y	Y
	308	Skaneateles Creek	Y	Y
	308.5	Unnamed Tributary to Skaneateles Creek	Y	N
Cayuga (309-320)	312	Putnam Brook	Y	N
	312.5	Spring Brook	Y	N
	316	Owasco Outlet	Y	N
	316.5	Swamp Brook	Y	N
	319.5	Seneca River	Y	N
Wayne (320-357)	320	Seneca River	Y	N
	322	Unnamed Tributary to Crusoe Creek	Y	N
	323	Unnamed Tributary to Black Creek	Y	N
	324 and 325	Black Creek	Y	N
	325.5	Unnamed Tributary to Black Creek	Y	N
	326.5	Old Erie Canal	Y	N
	328-330	Clyde River/Erie Canal	Y	N
	332	Old Erie Canal/Black Brook	Y	N
	335	Erie Canal	Y	N
	336	Canandaigua Creek	Y	Y
	327-329	Marbletown Creek/Tributaries	Y (C)	Y
	339.5	Erie Canal	Y	N
	341	Unnamed Tributary to Ganargua Creek	Y	N
	342-347	Ganargua Creek	Y	Y
	348	Unnamed Tributary to Ganargua Creek	Y	N
	349.5	Red Creek	Y	N
	351-352	Red Creek	Y	Y
	354.5-355	Unnamed Tributaries to Erie Canal	Y	Y
Monroe (357-388)	359.5-362	Thomas Creek	Y (C), (MS4)	Y
	363	Irondequoit Creek	Y (C), (MS4)	Y
	365.5	Allen Creek	Y	Y
	367.5	Irondequoit Creek	Y (C), (MS4)	N
	371.5	Genesee River	Y (C), (MS4)	Y
	374.5	Erie Canal	Y	Y
	376	Unnamed Tributary to Erie Canal	N	N
	377.5	Little Black Creek	Y	Y
	379	Unnamed Tributary to Little Black Creek	Y	N

Exhibit G-7—Empire Corridor West/Niagara Branch Surface Water Crossings in the 90/110 Study Area

County (Appx. Mile Post)	River/Stream Location (Mile Post)	Name	Impaired (303(d))/ Priority Water	Protected
	380.5	Unnamed Tributary to Black Creek	Y (C), (MS4)	N
	381	Unnamed Tributary to Black Creek	Y (C), (MS4)	N
	381.5	Unnamed Tributary to Black Creek	Y (C), (MS4)	N
	382	Unnamed Tributary to Black Creek	Y (C), (MS4)	N
	382.5	Unnamed Tributary to Black Creek	Y (C), (MS4)	N
	383	Unnamed Tributary to Black Creek	Y (C), (MS4)	N
	383.5	Little Black Creek	Y	N
	385	Unnamed Tributary to Black Creek	Y (C), (MS4)	N
	385.5	Unnamed Tributary to Black Creek	Y (C), (MS4)	N
	386	Black Creek	Y (C), (MS4)	N
Genesee (388-418)	389	Unnamed Tributary to Black Creek	Y (C), (MS4)	N
	392.5	Robins Brook	Y	N
	394	Robins Brook	Y	N
	395	Unnamed Tributary to Black Creek	Y (C), (MS4)	N
	396.5	Black Creek	Y (C), (MS4)	N
	398.5	Bigelow Creek/Godfrey Pond	Y (C), (MS4)	Y
	399.5	Unnamed Tributary to Bigelow Creek	Y (C), (MS4)	Y
	401	Unnamed Tributary of Horseshoe Lake	Y	N
	402	Unnamed Pond	N	N
	403.5	Tonawanda Creek	Y (C), (MS4)	Y
	407	Unnamed Tributary to Tonawanda Creek	Y (C), (MS4)	Y
	408.5	Bowen Creek	Y (C), (MS4)	N
	412	Unnamed Tributary to Murder Creek	Y	N
	414	Murder Creek	Y	N
	415	Unnamed Tributary to Murder Creek	Y	N
	416	Unnamed Tributary to Ellicott Creek	Y	N
	417.5	Unnamed Tributary to Murder Creek	Y	N
Erie (418-439/QDN1-QDN13)	418.5	Unnamed Tributary to Ellicott Creek	Y (C), (MS4)	Y
	422.5	Ellicott Creek	Y (C), (MS4)	Y
	425.5	North Branch of Plum Bottom Creek	Y	N
	6	Scajaquada Creek	Y (C), (MS4)	Y
	7.5	Unnamed Tributary to Niagara River	Y	N
	12	Unnamed Tributary to Ellicott Creek	N	N
Niagara (QDN13-QDN28)	12.5	Ellicott Creek	Y (C), (MS4)	N
	13.5	Tonawanda Creek/Erie Canal	Y	N
	14.5	Unnamed Tributary to Niagara River	N	N
	18	Black Creek	Y	N
	18.5	East Branch of Black Creek	Y	N
	19.5	Sawyer Creek	Y	N
	20	Bergholtz Creek	Y (C), (MS4)	N
	21	Cayuga Creek	Y	N
	25	Branch Gill Creek	Y	N
	26	Gill Creek	Y	N

Notes: Appx.= Approximate, Y = Yes, N = No

(C) = 303(d) segments impaired by pollutants related to construction, as specified in Appendix E of the NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity (Permit No. GP-0-10-001), January 29, 2010.

(MS4) = 303(d) segments impaired by pollutants of concern for municipal separate storm sewer systems (MS4s), as specified in Appendix 2 of the SPDES General Permit for Stormwater Discharges from MS4s (Permit No. GP-0-10-002), October 14, 2011.

The 90/110 Study Area is used for analysis of Alternatives 90A, 90B, and 110 and consists of the existing 464-mile long Empire Corridor alignment. The study area width is defined as being within 300 feet of the corridor centerline.

Source: NY GIS Clearinghouse, 2011, NYSDEC GIS Data, 2011

6.1.3 Empire Corridor West/Niagara Branch: 125 Study Area

The Empire Corridor West/Niagara Branch 125 Study Area follows a more direct route between Rensselaer and Buffalo, and does not closely adjoin the New York State Canal system. Exhibit G-8 summarizes crossings of waterways by county and by status (impaired/priority or protected waterway). The 125 Study Area crosses over the Hudson River (MP QH143.5), entering **Albany County** 1.8 miles south of the Livingston Avenue Bridge. The railroad skirts the southern boundary of the city of Albany and continues through Albany County over a distance of roughly 14 miles, crossing over Krum Kill at two locations. Of the two waterways crossed, only Krum Kill is a protected water (Class C(t) or B or above), and both the Hudson River and Krum Kill are impaired 303(d) waters. The entire county is within the Lower Hudson River watershed.

The 125 Study Area extends 17 miles through **Schenectady County** and remains in the Lower Hudson River watershed for approximately 1.5 miles before crossing into the Mohawk River watershed. It then passes back into the Lower Hudson River watershed for a majority of the county before crossing back into the Mohawk River watershed, just before MP QH171. The 125 Study Area crosses approximately 18 waterway crossings in Schenectady County. Of the 18 crossings, three are protected waters (Class C(t) or B or above), and 15 are impaired 303(d) waters. The protected and impaired streams include three unnamed tributaries to Norman's Kill (MPs QH161.5, QH168.25 and QH170.5). Impaired waterways include the Bonny Brook (MP QH163.5) and 11 unnamed tributaries (MPs QH158.75, QH160.5, QH162.75, QH164.5, QH166, QH166.5, QH167.5, QH168.25, QH168.5, QH171.25 and QH172.25).

The 125 Study Area remains in the Mohawk River watershed throughout the 6.5 miles in **Schoharie County**. The 125 Study Area crosses approximately nine waterway crossings in Schoharie County. Of the nine crossings, none are protected waters (Class C(t) or B or above), and all are impaired 303(d) waters. The impaired streams include Schoharie Creek (crossings at MPs QH174 and QH174.5 to QH175.75), Fly Creek (MPs QH179.5, QH180.25 and QH180.5), and four unnamed tributaries to Schoharie Creek (MPs QH174.25, QH176, QH177.5 and QH177.75).

The 125 Study Area continues within the Mohawk River watershed along the 21.3-miles through **Montgomery County**. The entire county remains within the Mohawk River watershed. There are approximately 21 waterway crossings in this county, most of which are tributaries to the Fly Creek, Mohawk River or Canajoharie Creek. Of the 21 crossings, one is a protected water (Class C(t) or B or above), and all are impaired 303(d) waters. The protected and impaired streams include an unnamed tributary to the Mohawk River (MP QH201.5). Impaired waterways in Montgomery County, in addition to the streams above, include Fly Creek (MPs QH181 and QH181.25), Flat Creek (MP QH188), Canajoharie Creek (MP QH192.5), four unnamed tributaries to Fly Creek (MPs QH182, QH182.5, QH185.5 and QH186.5), three unnamed tributaries to Canajoharie Creek (MPs QH190.75, QH191 and QH193) and nine other unnamed tributaries to the Mohawk River (MPs QH196.25, QH196.5, QH196.75, QH197.5, QH199.25, QH200, QH200.5, QH200.75 and QH201).

The 125 Study Area traverses through rural **Herkimer County** for approximately 25.3 miles. The entire county remains within the Mohawk River watershed. There are approximately 39 waterway crossings in Herkimer County. Of the 39 crossings, 15 are protected waters (Class C(t) or B or above), and 37 are impaired 303(d) waters. Protected streams include one unnamed tributary to the Erie Canal (MP QH223.5) and the unnamed tributary to Starch Factory Creek (MP QH257). The impaired and protected streams include Otsquago Creek (MP QH202.5), Ohisa Creek (MP QH206.5), Fulmer Creek (MPs QH212 and QH215), two unnamed tributaries to the Mohawk River (MPs QH202.5 and

QH208), one unnamed tributary to Ohisa Creek (MP QH207), and six unnamed tributaries to the Erie Canal (MPs QH218, QH221.5, QH222.5, QH222.75, QH223, and QH223.25). In addition to the above-mentioned crossings, impaired waterways include two unnamed tributaries to Otsquago Creek (MPs QH203.75 and QH204), two unnamed tributaries to Ohisa Creek (MPs QH206 and QH206.25), one unnamed tributary to the Mohawk River (MP QH209.5), seven unnamed tributaries to Fulmer Creek (MPs QH210.75, QH211.5, QH212.5, QH213.75, QH214.25, QH214.5 and QH215.25), eight unnamed tributaries to the Erie Canal (MPs QH216.75, QH217.75, QH218.75, QH219.5, QH219.75, QH220, QH220.5 and QH221), one unnamed pond (MP QH224.25), one unnamed tributary to Ferguson Creek (MP QH225.5), and two unnamed tributaries to Starch Factory Creek (MPs QH226 and QH226.5).

The 125 Study Area extends 22 miles through **Oneida County**, primarily traversing rural properties. The eastern half of Oneida County is within the Mohawk River watershed, but as the corridor crosses County Road 26 (Rome Road) (MP QH242) the corridor enters the Oswego River/Finger Lakes watershed. There are approximately 18 waterway crossings in this county, of which seven are protected waters (Class C(t) or B or above) and all are impaired 303(d) waters. The protected streams include Sauquoit Creek (MP QH230.25), Mud Creek (MP QH234.5), Sherman Brook (MP QH235.5), Oriskany Creek (MP QH236), Sconondoa Creek (MP QH248), one unnamed tributary to Sauquoit Creek (MP QH228) and two unnamed tributaries to Mud Creek (MPs QH232.5 and QH233.25). In addition to the above-mentioned crossings, impaired waterways also include Palmer Creek (MP QH229.5), one unnamed tributary to Sauquoit Creek (MP QH230.25), three unnamed tributaries to Oriskany Creek (MPs QH237, QH238.25 and QH238.5), three unnamed tributaries to Deans Creek (MPs QH239.75, QH240 and QH240.75) and two unnamed tributaries to Stony Creek (MPs QH245 and QH246).

The corridor extends 14.6 miles through **Madison County**, which is situated entirely within the Oswego River/Finger Lakes watershed. At MP QH260.5 and QH262.5, the Old Erie Canal flows under the corridor, extending south and out of the study area. There are approximately 20 waterway crossings in this county. Of the 20 crossings, five are protected waters (Class C(t) or B or above), and all are impaired 303(d) waters. The protected streams include Canastota Creek (MP QH255.75), Owlville Creek (MP QH257.5), Canaseraga Creek (MP QH260), Chittenango Creek (MP QH262.25) and one unnamed tributary to Canaseraga Creek (MP QH260.25). In addition to the above-mentioned crossings, impaired waterways also include Oneida Creek (MP QH249.5), Cowselon Creek (MP QH253), Dutch Settlement Creek (MP QH254.5), the Old Erie Canal, three unnamed tributaries to Oneida Creek (MPs QH249.75, QH250 and QH251), an unnamed pond (MP QH252.5), five unnamed tributaries to the Old Erie Canal (MPs QH253.5, QH254, QH259, QH262.75 and QH264) and one unnamed tributary to Owlville Creek (MP QH258.25).

The corridor extends 31.6 miles through **Onondaga County**, merging with the Empire Corridor West 90/110 Study Area just east of Syracuse. At this location it roughly parallels the New York State Thruway and skirts the southeast shores of Onondaga Lake in the city of Syracuse. There are approximately 20 waterway crossings in this county and all are within the Oswego River/Finger Lakes watershed. Of the 20 crossings, five are protected waters (Class C(t) or B or above), and 15 are impaired 303(d) waters. The protected streams include Pools Brook (MP QH264.75), Lake Brook (MP QH266.5), two unnamed tributaries to Pools Brook (MPs QH265 and 265.25), and one unnamed tributary to the Seneca River (MP QH292). In addition to the above-mentioned crossings, impaired waterways also include Limestone Creek (MP QH268.5), Butternut Creek (MP QH270.5), South Branch Ley Creek (MP QH272.5), Erie Canal (MP QH278.5), Geddes Brook (MP QH281.75), Dead Man Creek (MP QH289.75), one unnamed tributary to Ley Creek (MP QH274), one unnamed tributary to Nine Mile Creek (MP QH286), and two unnamed tributaries to Dead Man Creek (MPs QH290 and QH290.75). Three other streams, none of which are protected or impaired, cross the corridor in this

Onondaga County: the old Erie Canal (MP QH265.75), Nine Mile Creek (MP QH283) and three unnamed tributaries to Nine Mile Creek (MPs QH285, QH285.25 and QH286.5).

The 125 Study Area extends 11.1 miles through **Cayuga County**, north of the Empire Corridor West (90/110 Study Area). There are approximately 15 waterway crossings in this county, all of which are within the Oswego River/Finger Lakes watershed. Of the 15 crossings, one is a protected water (Class C(t) or B or above), and 12 are impaired 303(d) waters. Protected waters include the Seneca River (MP QH295.75). In addition to the Seneca River, impaired waterways include Muskrat Creek (MP QH297.5), Spring Lake Outlet (MPs QH305.5, QH305.75 and QH306.25), one unnamed pond (MPs QH298.5 to QH299) and six unnamed tributaries to the Seneca River (MPs QH299.5, QH300, QH301.25, QH301.75, QH303.5, and QH304).

The 125 Study Area extends 35.5 miles through **Wayne County**. Approximately 98 percent of the railroad is located with the Oswego River/Finger Lakes watershed in Wayne County. Just before the western border of the county, the railroad enters the Lake Ontario Tributaries watershed (MP 357).

There are approximately 43 waterway crossings in Wayne County. Of the 43 crossings, three are protected waters (Class C(t) or B or above), and 42 are impaired 303(d) waters. The protected streams include Millpond (MP QH310.5), Sodus Creek (MP QH316.5) and an unnamed tributary to Mudge Creek (MP QH313.5). In addition to the above-mentioned crossings (with the exception of the unnamed tributary to Mudge Creek), impaired waterways also include Butler Creek (MP QH308.5), Wolcott Creek (MP QH311.75), Black Creek (MP QH312.5), Red Creek (MPs QH331.75 and QH335.75), an unnamed tributary to the Seneca River (MP QH306.75), an unnamed tributary to Butler Creek (MP QH309), two unnamed streams (MPs QH310.5 and QH310.75), two unnamed tributaries to Black Creek (MPs QH314.5 and QH315.25), two unnamed tributaries to Sodus Creek (MPs QH316 and QH316.75), 10 unnamed tributaries to the Clyde River (MPs QH317.75, QH318.5, QH319, QH319.5, QH320.25, QH320.75, QH321.5, QH322.5, QH323 and QH323.75), 10 unnamed tributaries to Ganargua Creek (MPs QH324.5, QH325.5, QH326.5, QH327, QH327.25, QH329.5, QH333, QH333.5, QH333.75 and QH334.75) and seven unnamed tributaries to Red Creek (MPs QH331, QH332.5, QH334, QH337.5, QH338.25, QH338.75 and QH340.5-QH341).

The 125 Study Area extends 29.5 miles through **Monroe County**. The county remains in the Lake Ontario Tributaries watershed until just east of Rochester where the railroad enters the Genesee River watershed, just before crossing the Genesee River (MP QH356). The corridor merges with the Empire Corridor West (90/110 Study Area) east of Rochester continuing west through the city before the 125 Study Area diverges to the north. The Erie Canal crosses the corridor at MP QH359.

The 125 Study Area crosses approximately 23 waterway crossings in Monroe County, including the Erie Canal crossing mentioned above. Of the 23 crossings, 9 are protected waters (Class C(t) or B or above), and 18 are impaired 303(d) waters. The protected streams include Thomas Creek (MPs QH345.5 to QH346.5), Irondequoit Creek (MP QH347.5), Allen Creek (MP QH350.25), Genesee River (MP QH356.75), Erie Canal (MP QH359), three unnamed tributaries to Thomas Creek (MPs QH342.5, QH343.5 and QH344) and an unnamed pond (MP QH342.75). In addition to the above-mentioned crossings, impaired waterways also include and additional crossing of Irondequoit Creek (MP QH351.75), Little Black Creek (MPs QH363.75 and QH365.25), and six unnamed tributaries to Black Creek and Little Black Creek (MPs QH363, QH363.5, QH367.25, QH369, QH371 and QH371.5).

The 125 Study Area traverses approximately 29.7 miles through **Genesee County**. The county remains in the Lake Ontario Tributaries watershed until just east of Rochester where the railroad enters the Genesee River watershed, just before crossing the Genesee River (MP QH356). There are

approximately 25 waterway crossings in Genesee County. Of the 25 crossings, one is a protected water (Class C(t) or B or above), and 22 are impaired 303(d) waters. The protected stream includes Tonawanda Creek (MP QH397.5). In addition to the above-mentioned crossings, impaired waterways also include Black Creek (MPs QH375.75 and QH377), Oak Orchard Creek (MP QH383.5), Whitney Creek (MP QH395.5), Murder Creek (MP QH400.5), four unnamed tributaries to Black Creek (MPs QH372.5, QH373.25, QH374.25 and QH377.25), two unnamed tributaries to Spring Creek (MP QH381 and MPs QH382 to QH383), six unnamed tributaries to Oak Orchard Creek (MPs QH385, QH385.5, QH386, QH387.25, QH388 and QH389.25), an unnamed pond (MP QH389.75), an unnamed tributary to Brinningstool Creek (MP QH393), an unnamed tributary to Tonawanda Creek (MPs QH396.5 to QH397) and an unnamed tributary to Murder Creek (MP QH401).

The 125 Study Area extends 35.3 miles through **Erie County**, which is situated entirely within the Niagara River/Lake Erie watershed. The eastern segment merges with the Empire Corridor West/Niagara Branch (90/110 Study Area) east of Depew. The Empire Corridor then turns north to follow the Lake Erie shoreline. The corridor then continues north, roughly parallel to, and within 50 feet to 2.5 miles east of, the Niagara River, for a distance of 12.7 miles. Of the 10 waterway crossings in this county, two are protected waters (Class C(t) or B or above), and six are impaired 303(d) waters. The protected and impaired waters include Ellicott Creek (MP QH411.5) and Scajaquada Creek (MP QDN6). The other impaired waterways include Ransom Creek (MPs QH406.5 and QH408.75), Ellicott Creek (MP QDN12.5), and one other unnamed stream (MP QDN7.5).

The railroad extends 14.4 miles through **Niagara County** within the Niagara River/Lake Erie watershed. The railroad follows the shoreline of the Niagara River, then extends north towards the Niagara Falls International Airport, turning west to terminate at Niagara Falls. Of the nine waterway crossings in the county, none are protected waters (Class C(t) or B or above), and eight are impaired 303(d) waters. The impaired waterways include Tonawanda Creek/Erie Canal (MP QDN13.5), Black Creek (MP QDN18), East Branch of Black Creek (MP QDN18.5), Sawyer Creek (MP QDN19.5), Bergholtz Creek (MP QDN20), Cayuga Creek (MP QDN21), Branch Gill Creek (MP QDN25) and Gill Creek (MP QDN26).

6.2 Environmental Consequences

Chapter 4 of the Tier 1 Final EIS addresses and compares the impacts of the Preferred Alternative, Alternative 90B, to those of the other alternatives considered (refer to Section 4.6). The potential effects impacts of the Base Alternative and other Build Alternatives are described in more detail below.

6.2.1 Base Alternative

Improvements from the eight projects for track and station infrastructure comprising the Base Alternative, which have been completed, were anticipated in the Tier 1 Draft EIS to involve approximately 68 surface water crossings.

6.2.2 Alternative 90A

Improvements from this alternative that follows the existing Empire Corridor would have approximately 107 surface water crossings.

Exhibit G-8—Empire Corridor West/Niagara Branch Surface Water Crossings in the 125 Study Area

County (Appx. Mile Post)	River/Stream Crossing (Appx. Mile Post)	Name	Impaired (303(d))/ Priority Water	Protected
Albany (QH 143.5-157)	QH 143.5	Hudson River	N	N
	QH 147.75	Krum Kill	Y	Y
	QH 149.75	Krum Kill	Y	Y
Schenectady (QH 157-174)	QH 158.75	Unnamed Tributary to Norman's Kill	Y	N
	QH 160.5	Unnamed Tributary to Norman's Kill	Y	N
	QH 161.5	Unnamed Tributary to Norman's Kill	Y	Y
	QH 162.75	Unnamed Tributary to Norman's Kill	Y	N
	QH 163.5	Bonny Brook	Y	N
	QH 164.5	Unnamed Pond	N	N
	QH 164.5	Unnamed Tributary to Norman's Kill	Y	N
	QH 166	Unnamed Tributary to Norman's Kill	Y	N
	QH 166.5	Unnamed Tributary to Norman's Kill	Y	N
	QH 167.5	Unnamed Tributary to Norman's Kill	Y	N
	QH 168.25	Unnamed Tributary to Norman's Kill	Y	Y
	QH 168.25	Unnamed Tributary to Norman's Kill	Y	N
	QH 168.5	Unnamed Tributary to Norman's Kill	Y	N
		Unnamed Tributary to Delanson Reservoir and Norman's Kill	Y	Y
	QH 170.5		Y	Y
	QH 171.25	Unnamed Tributary to Schoharie Creek	Y	N
	QH 172	Unnamed Pond	N	N
	QH 172.5	Unnamed Tributary to Schoharie Creek	Y	N
	QH 173.5	Unnamed Pond	N	N
Schoharie (QH 174-180.5)	QH 174	Schoharie Creek	Y	N
	QH 174.25	Unnamed Tributary to Schoharie Creek	Y	N
	QH 174.5-175.75	Schoharie Creek	Y	N
	QH 176	Unnamed Tributary to Schoharie Creek	Y	N
	QH 177.5	Unnamed Tributary to Schoharie Creek	Y	N
	QH 177.75	Unnamed Tributary to Schoharie Creek	Y	N
	QH 179.5	Fly Creek	Y	N
	QH 180.25	Fly Creek	Y	N
	QH 180.5	Fly Creek	Y	N
Montgomery (QH 180.5-202)	QH 181	Fly Creek	Y	N
	QH 181.25	Fly Creek	Y	N
	QH 182	Unnamed Tributary to Fly Creek	Y	N
	QH 182.5	Unnamed Tributary to Fly Creek	Y	N
	QH 185.5	Unnamed Tributary to Flat Creek	Y	N
	QH 186.5	Unnamed Tributary to Flat Creek	Y	N
	QH 188	Flat Creek	Y	N
	QH 190.75	Unnamed Tributary to Canajoharie Creek	Y	N
	QH 191	Unnamed Tributary to Canajoharie Creek	Y	N
	QH 192.5	Canajoharie Creek	Y	N
	QH 193	Unnamed Tributary to Canajoharie Creek	Y	N
	QH 196.25	Unnamed Tributary to Otsquago Creek/Mohawk River	Y	N
	QH 196.5	Unnamed Tributary to Otsquago Creek/Mohawk River	Y	N
	QH 196.75	Unnamed Tributary to Otsquago Creek/Mohawk River	Y	N
	QH 197.5	Unnamed Tributary to Otsquago Creek/Mohawk River	Y	N
	QH 199.25	Unnamed Tributary to Otsquago Creek/Mohawk River	Y	N
	QH 200	Unnamed Tributary to Otsquago Creek/Mohawk River	Y	N
	QH 200.5	Unnamed Tributary to Otsquago Creek/Mohawk River	Y	N
	QH 200.75	Unnamed Tributary to Otsquago Creek/Mohawk River	Y	N
	QH 201	Unnamed Tributary to Otsquago Creek/Mohawk River	Y	N
	QH 201.5	Unnamed Tributary to Otsquago Creek/Mohawk River	Y	Y
Herkimer (QH 202-227.5)	QH 202.5	Unnamed Tributary to Otsquago Creek/Mohawk River	Y	Y
	QH 202.5	Otsquago Creek	Y	Y
	QH 203.75	Unnamed Tributary to Otsquago Creek/Mohawk River	Y	N
	QH 204	Unnamed Tributary to Otsquago Creek/Mohawk River	Y	N
	QH 206	Unnamed Tributary to Ohisa Creek	Y	N
	QH 206.25	Unnamed Tributary to Ohisa Creek	Y	N
	QH 206.5	Ohisa Creek	Y	Y
	QH 207	Unnamed Tributary to Ohisa Creek	Y	Y
	QH 208	Unnamed Tributary to Nowadaga Creek/Mohawk River	Y	Y

Exhibit G-8—Empire Corridor West/Niagara Branch Surface Water Crossings in the 125 Study Area

County (Appx. Mile Post)	River/Stream Crossing (Appx. Mile Post)	Name	Impaired (303(d))/ Priority Water	Protected
	QH 209.5	Unnamed Tributary to Nowadaga Creek/Mohawk River	Y	N
	QH 210.75	Unnamed Tributary to Fulmer Creek	Y	N
	QH 211.5	Unnamed Tributary to Fulmer Creek	Y	N
	QH 212	Fulmer Creek	Y	Y
	QH 212.5	Unnamed Tributary to Fulmer Creek	Y	N
	QH 213.74	Unnamed Tributary to Fulmer Creek	Y	N
	QH 214.25	Unnamed Tributary to Fulmer Creek	Y	N
	QH 214.5	Unnamed Tributary to Fulmer Creek	Y	N
	QH 215	Fulmer Creek	Y	Y
	QH 215.25	Unnamed Tributary to Fulmer Creek	Y	N
	QH 216.75	Unnamed Tributary to Erie Canal	Y	N
	QH 217.75	Unnamed Tributary to Erie Canal	Y	N
	QH 218	Unnamed Tributary to Erie Canal	Y	Y
	QH 218.75	Unnamed Tributary to Erie Canal	Y	N
	QH 219.5	Unnamed Tributary to Erie Canal	Y	N
	QH 219.75	Unnamed Tributary to Erie Canal	Y	N
	QH 220	Unnamed Tributary to Erie Canal	Y	N
	QH 220.5	Unnamed Tributary to Erie Canal	Y	N
	QH 221	Unnamed Tributary to Moyer Creek/Erie Canal	Y	N
	QH 221.5	Unnamed Tributary to Moyer Creek/Erie Canal	Y	Y
	QH 222.5	Unnamed Tributary to Moyer Creek/Erie Canal	Y	Y
	QH 222.75	Unnamed Tributary to Moyer Creek/Erie Canal	Y	Y
	QH 223	Unnamed Tributary to Moyer Creek/Erie Canal	Y	Y
	QH 223.25	Unnamed Tributary to Moyer Creek/Erie Canal	Y	Y
	QH 223.5	Unnamed Tributary to Moyer Creek/Erie Canal	N	Y
	QH 224.25	Unnamed Pond	Y	N
	QH 225.5	Unnamed Tributary to Ferguson Creek	Y	N
	QH 226	Unnamed Tributary to Starch Factory Creek	Y	N
	QH226.5	Unnamed Tributary to Starch Factory Creek	Y	N
	QH 227	Unnamed Tributary to Starch Factory Creek	N	Y
Oneida (QH 227.5-249)	QH 228	Unnamed Tributary to Sauquoit Creek	Y	Y
	QH 229.5	Palmer Creek	Y	N
	QH 230.25	Sauquoit Creek	Y	Y
	QH 230.25	Unnamed Tributary to Sauquoit Creek	Y	N
	QH 232.5	Unnamed Tributary to Mud Creek	Y	Y
	QH 233.25	Unnamed Tributary to Mud Creek	Y	Y
	QH 234.5	Mud Creek	Y	N
	QH 235.5	Sherman Brook	Y	Y
	QH 236	Oriskany Creek	Y	Y
	QH 237	Unnamed Tributary to Oriskany Creek	Y	N
	QH 238.25	Unnamed Tributary to Oriskany Creek	Y	N
	QH 238.5	Unnamed Tributary to Oriskany Creek	Y	N
	QH 239.75	Unnamed Tributary to Deans Creek	Y	N
	QH 240	Unnamed Tributary to Deans Creek	Y	N
	QH 240.75	Unnamed Tributary to Deans Creek	Y	N
	QH 245	Unnamed Tributary to Stony Creek	Y	N
	QH 246	Unnamed Tributary to Stony Creek	Y	N
	QH 248	Sconondoa Creek	Y	Y
Madison (QH 249-264)	QH 249.5	Oneida Creek	Y	N
	QH 249.75	Unnamed Tributary to Oneida Creek	Y	N
	QH 250	Unnamed Tributary to Oneida Creek	Y	N
	QH 251	Unnamed Tributary to Oneida Creek	Y	N
	QH 252.5	Unnamed Pond	Y	N
	QH 253	Cowselon Creek	Y	N
	QH 253.5	Unnamed Tributary to Old Erie Canal	Y	N
	QH 254	Unnamed Tributary to Old Erie Canal	Y	N
	QH 254.5	Dutch Settlement Creek	Y	N
	QH 255.75	Canastota Creek	Y (MS4)	Y
	QH 257.5	Owlville Creek	Y	Y
	QH 258.25	Unnamed Tributary Owlville Creek	Y	N
	QH 259	Unnamed Tributary to Old Erie Canal	Y	N

Exhibit G-8—Empire Corridor West/Niagara Branch Surface Water Crossings in the 125 Study Area

County (Appx. Mile Post)	River/Stream Crossing (Appx. Mile Post)	Name	Impaired (303(d))/ Priority Water	Protected
	QH 260	Unnamed Tributary to Canaseraga Creek	Y	Y
	QH 260.25	Canaseraga Creek	Y	Y
	QH 260.5	Old Erie Canal	Y	N
	QH 262.25	Chittenango Creek	Y	Y
	QH 262.5	Old Erie Canal	Y	N
	QH 262.75	Unnamed Tributary to Old Erie Canal	Y	N
	QH 264	Unnamed Tributary to Old Erie Canal	Y	N
Onondaga (QH 264-295.5)	QH 264.75	Pools Brook	Y	Y
	QH 265	Unnamed Tributary to Pools Brook	Y	Y
	QH 265.25	Unnamed Tributary to Pools Brook	Y	Y
	QH 265.75	Old Erie Canal	N	N
	QH 266.5	Lake Brook	Y	Y
	QH 268.5	Limestone Creek	Y	N
	QH 270.5	Butternut Creek	Y	N
	QH 272.75	South Branch Ley Creek	Y (C), (MS4)	N
	QH 274	Unnamed Tributary to Ley Creek	Y (C), (MS4)	N
	QH 278.5	Erie Canal	Y	N
	QH 281.75	Geddes Brook	Y	N
	QH 283	Nine Mile Creek	Y (C), (MS4)	N
	QH 285	Unnamed Tributary to Nine Mile Creek	N	N
	QH 285.25	Unnamed Tributary to Nine Mile Creek	Y (C), (MS4)	N
	QH 286	Unnamed Tributary to Nine Mile Creek	Y (C), (MS4)	N
	QH 286.5	Unnamed Tributary to Nine Mile Creek	N	N
	QH 289.75	Dead Man Creek	Y	N
	QH 290	Unnamed Tributary to Dead Man Creek	Y	N
	QH 290.75	Unnamed Tributary to Dead Man Creek	Y	N
	QH 292	Unnamed Tributary to Seneca River	Y	Y
Cayuga (QH 295-306.5)	QH 295.75	Seneca River	Y	Y
	QH 297.5	Muskrat Creek	Y	N
	QH 298.5-299	Unnamed Pond	Y	N
	QH 299.25	Unnamed Pond	N	N
	QH 299.5	Unnamed Tributary to Seneca River	Y	N
	QH 300	Unnamed Tributary to Seneca River	Y	N
	QH 301.25	Unnamed Tributary to Seneca River	Y	N
	QH 301.75	Unnamed Tributary to Seneca River	Y	N
	QH 302.25	Unnamed Tributary to Seneca River	N	N
	QH 303.5	Unnamed Tributary to Seneca River	Y	N
	QH 304	Unnamed Tributary to Seneca River	Y	N
	QH 305.5	Spring Lake Outlet	Y	N
	QH 305.75	Spring Lake Outlet	Y	N
	QH 306.25	Spring Lake Outlet	Y	N
	QH 306.5	Unnamed Tributary to Spring Lake Outlet	N	N
Wayne (QH 306.5-342)	QH 306.75	Unnamed Tributary to Seneca River	Y	N
	QH 308.5	Butler Creek	Y	N
	QH 309	Unnamed Tributary to Butler Creek	Y	N
	QH 310.5	Millpond	Y	Y
	QH 310.5	Unnamed Tributary	Y	N
	QH 310.75	Unnamed Tributary	Y	N
	QH 311.75	Wolcott Creek	Y	N
	QH 312.5	Black Creek	Y	N
	QH 313.5	Unnamed Tributary to Mudge Creek	N	Y
	QH 314.5	Unnamed Tributary to Black Creek	Y	N
	QH 315.25	Unnamed Tributary to Black Creek	Y	N
	QH 316	Unnamed Tributary to Sodus Creek	Y	N
	QH 316.5	Sodus Creek	Y	Y
	QH 316.75	Unnamed Tributary to Sodus Creek	Y	N
	QH 317.75	Unnamed Tributary to Clyde River	Y	N
	QH 318.5	Unnamed Tributary to Clyde River	Y	N
	QH 319	Unnamed Tributary to Clyde River	Y	N
	QH 319.5	Unnamed Tributary to Clyde River	Y	N
	QH 320.25	Unnamed Tributary to Clyde River	Y	N

Exhibit G-8—Empire Corridor West/Niagara Branch Surface Water Crossings in the 125 Study Area

County (Appx. Mile Post)	River/Stream Crossing (Appx. Mile Post)	Name	Impaired (303(d))/ Priority Water	Protected
	QH 320.75	Unnamed Tributary to Clyde River	Y	N
	QH 321.5	Unnamed Tributary to Clyde River	Y	N
	QH 322.5	Unnamed Tributary to Clyde River	Y	N
	QH 323	Unnamed Tributary to Clyde River	Y	N
	QH 323.75	Unnamed Tributary to Clyde River	Y	N
	QH 324.5	Unnamed Tributary to Ganargua Creek	Y	N
	QH 325.5	Unnamed Tributary to Ganargua Creek	Y	N
	QH 326.5	Unnamed Tributary to Ganargua Creek	Y	N
	QH 327	Unnamed Tributary to Ganargua Creek	Y	N
	QH 327.25	Unnamed Tributary to Ganargua Creek	Y	N
	QH 329.5	Unnamed Tributary to Ganargua Creek	Y	N
	QH 331	Unnamed Tributary to Red Creek	Y	N
	QH 331.75	Red Creek	Y	N
	QH 332.5	Unnamed Tributary to Red Creek	Y	N
	QH 333	Unnamed Tributary to Ganargua Creek	Y	N
	QH 333.5	Unnamed Tributary to Ganargua Creek	Y	N
	QH 333.75	Unnamed Tributary to Ganargua Creek	Y	N
	QH 334	Unnamed Tributary to Red Creek	Y	N
	QH 334.75	Unnamed Tributary to Ganargua Creek	Y	N
	QH 335.75	Red Creek	Y	N
	QH 337.5	Unnamed Tributary to Red Creek	Y	N
	QH 338.25	Unnamed Tributary to Red Creek	Y	N
	QH 338.75	Unnamed Tributary to Red Creek	Y	N
	QH 340.5-341	Unnamed Tributary to Red Creek	Y	N
Monroe (QH 342-371.5)	QH 342.5	Unnamed Tributary to Thomas Creek	Y (C), (MS4)	Y
	QH 342.75	Unnamed Pond	Y	Y
	QH 343.5	Unnamed Tributary to Thomas Creek	Y (C), (MS4)	Y
	QH 344	Unnamed Tributary to Thomas Creek	Y (C), (MS4)	Y
	QH 345.5-346.5	Thomas Creek	Y (C), (MS4)	Y
	QH 347.5	Irondequoit Creek	Y (C), (MS4)	Y
	QH 350.25	Allen Creek	Y	Y
	QH 351.75	Irondequoit Creek	Y (C), (MS4)	N
	QH 356.75	Genesee River	Y (C), (MS4)	Y
	QH 359	Erie Canal	Y	Y
	QH 360.5	Unnamed Tributary to Erie Canal	N	N
	QH 362	Unnamed Tributary to Little Black Creek	N	N
	QH 363	Unnamed Tributary to Little Black Creek	Y	N
	QH 363.5	Unnamed Tributary to Little Black Creek	Y	N
	QH 363.75	Little Black Creek	Y	N
	QH 365.25	Little Black Creek	Y	N
	QH 367	Little Black Creek	N	N
	QH 367.25	Unnamed Tributary to Little Black Creek	Y	N
	QH 367.5	Unnamed Tributary to Little Black Creek	N	N
	QH 368.5	Unnamed Tributary to Black Creek	N	N
	QH 369	Unnamed Tributary to Black Creek	Y (C), (MS4)	N
	QH 371	Unnamed Tributary to Black Creek	Y (C), (MS4)	N
	QH 371.5	Black Creek Tributary	Y (C), (MS4)	N
Genesee (QH 371.5-401.5)	QH 372.5	Unnamed Tributary to Black Creek	Y (C), (MS4)	N
	QH 373.25	Unnamed Tributary to Black Creek	Y (C), (MS4)	N
	QH 374.25	Unnamed Tributary to Black Creek	Y (C), (MS4)	N
	QH 375.75	Black Creek	Y (C), (MS4)	N
	QH 377	Black Creek	Y (C), (MS4)	N
	QH 377.25	Unnamed Tributary to Black Creek	Y (C), (MS4)	N
	QH 381	Unnamed Tributary to Spring Creek	Y	N
	QH 381.5	Unnamed Tributary to Spring Creek	N	N
	QH 382-383	Unnamed Tributary to Spring Creek	Y	N
	QH 383.5	Oak Orchard Creek	Y	N
	QH 385	Unnamed Tributary to Oak Orchard Creek	Y	N
	QH 385.5	Unnamed Tributary to Oak Orchard Creek	Y	N
	QH 386	Unnamed Tributary to Oak Orchard Creek	Y	N
	QH 387.25	Unnamed Tributary to Oak Orchard Creek	Y	N

Exhibit G-8—Empire Corridor West/Niagara Branch Surface Water Crossings in the 125 Study Area

County (Appx. Mile Post)	River/Stream Crossing (Appx. Mile Post)	Name	Impaired (303(d))/ Priority Water	Protected
	QH 388	Unnamed Tributary to Oak Orchard Creek	Y	N
	QH 389.25	Unnamed Tributary to Oak Orchard Creek	Y	N
	QH 389.75	Unnamed Pond	Y	N
	QH 390.5	Unnamed Pond	N	N
	QH 393	Unnamed Tributary to Brinningstool Creek	Y	N
	QH 395.5	Whitney Creek	Y	N
	QH 395.75	Unnamed Pond	N	N
	QH 396.5-397	Unnamed Tributary to Tonawanda Creek	Y (C), (MS4)	N
	QH 397.5	Tonawanda Creek	Y (C), (MS4)	Y
	QH 400.5	Murder Creek	Y	N
	QH 401	Unnamed Tributary to Murder Creek	Y	N
Erie (QH 401.5-QDN 13)	QH 406.5	Ransom Creek	Y (MS4)	N
	QH 408.75	Ransom Creek	Y (MS4)	N
	QH 409	Unnamed Pond	N	N
	QH 409.25	Unnamed Pond	N	N
	QH 409.5	Unnamed Pond	N	N
	QH 411.5	Ellicott Creek	Y (C), (MS4)	Y
	QDN 6	Scajaquada Creek	Y (MS4)	Y
	QDN 7.5	Unnamed Tributary to Niagara River	Y	N
	QDN 12	Unnamed Tributary to Ellicott Creek	N	N
	QDN 12.5	Ellicott Creek	Y (C), (MS4)	N
Niagara (QDN13-QDN28)	QDN 13.5	Tonawanda Creek/Erie Canal	Y	N
	QDN 14.5	Unnamed Tributary to Niagara River	N	N
	QDN 18	Black Creek	Y	N
	QDN 18.5	East Branch of Black Creek	Y	N
	QDN 19.5	Sawyer Creek	Y	N
	QDN 20	Bergholtz Creek	Y (C), (MS4)	N
	QDN 21	Cayuga Creek	Y	N
	QDN 25	Branch Gill Creek	Y	N
	QDN 26	Gill Creek	Y	N

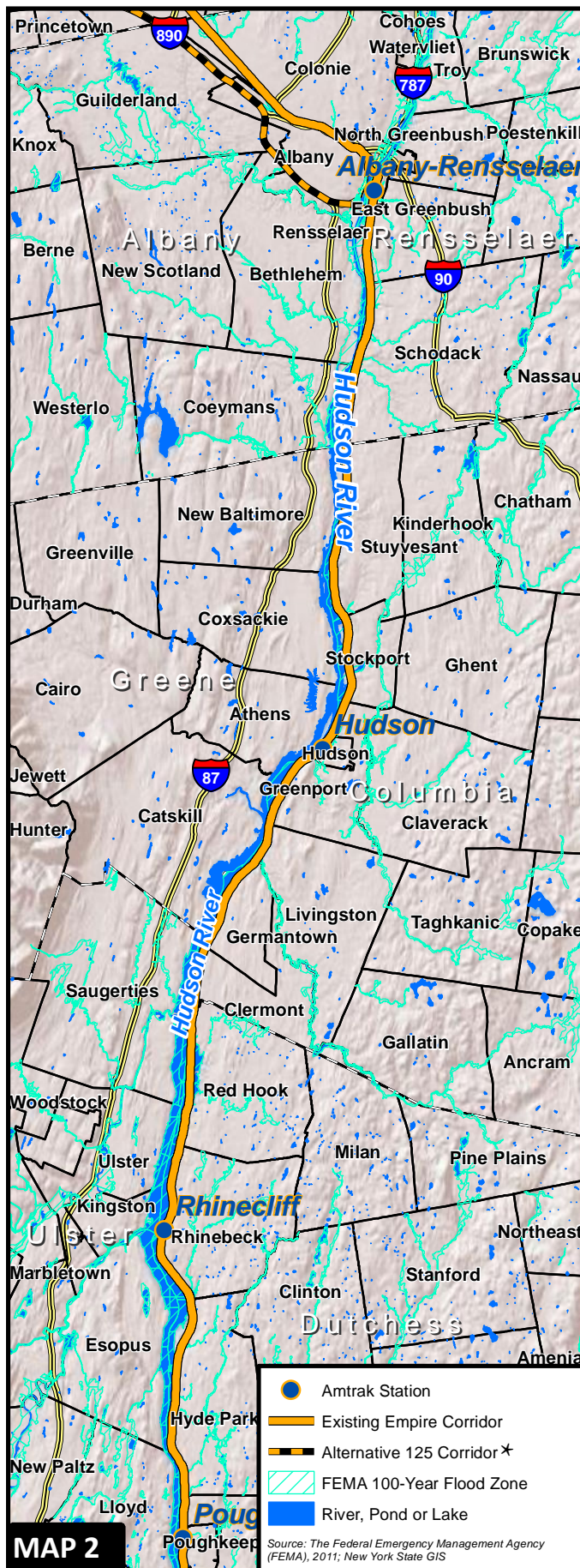
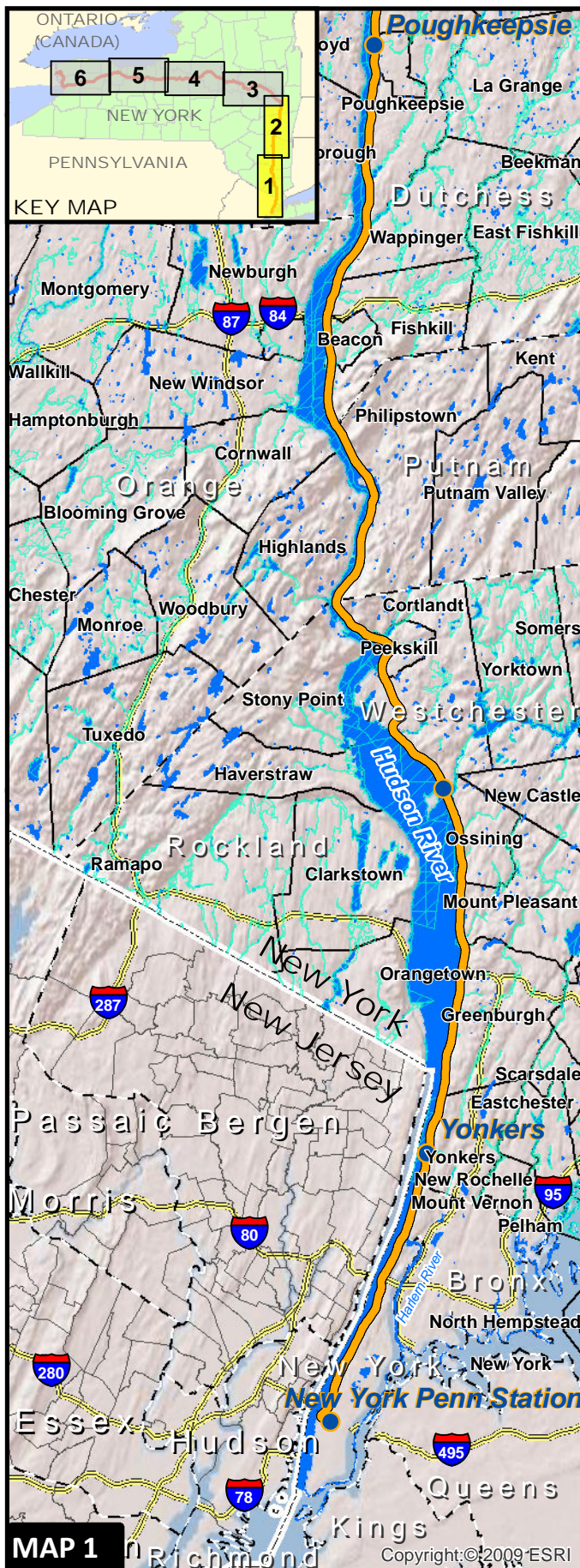
Notes: Appx.= Approximate, Y = Yes, N = No

(C) = 303(d) segments impaired by pollutants related to construction, as specified in Appendix E of the NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity (Permit No. GP-0-10-001), January 29, 2010.

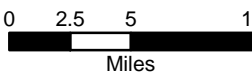
(MS4) = 303(d) segments impaired by pollutants of concern for municipal separate storm sewer systems (MS4s), as specified in Appendix 2 of the SPDES General Permit for Stormwater Discharges from MS4s (Permit No. GP-0-10-002), October 14, 2011.

The 125 Study Area is used for analysis of Alternative 125 and consists of portions of the existing Empire Corridor and new alignment and is 450 miles long. The study area width is defined as being within 300 feet of the corridor centerline.

Source: NY GIS Clearinghouse, 2011, NYSDEC GIS Data, 2011



*Alt. 125 as shown is a potential corridor used to analyze the potential operating characteristics, environmental impacts and cost for this speed (125 mph) threshold.

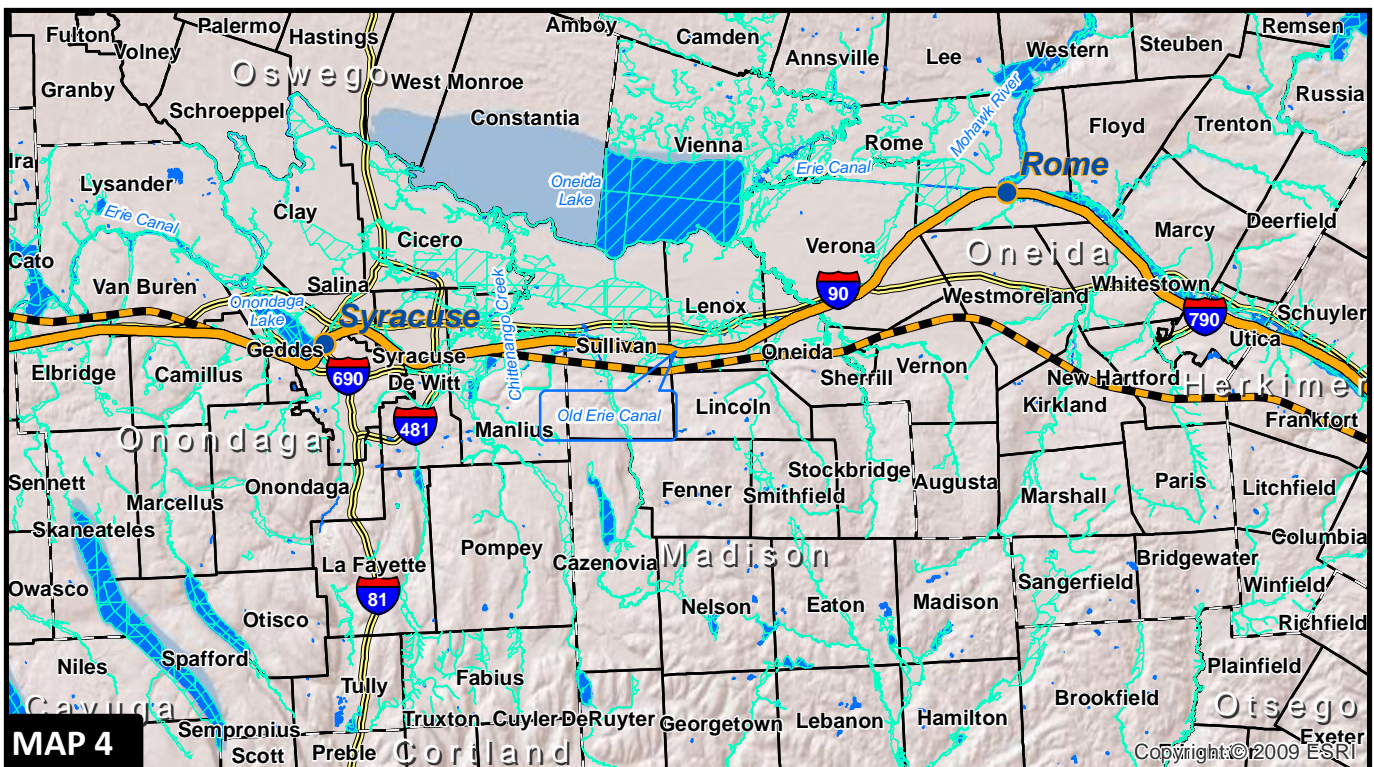
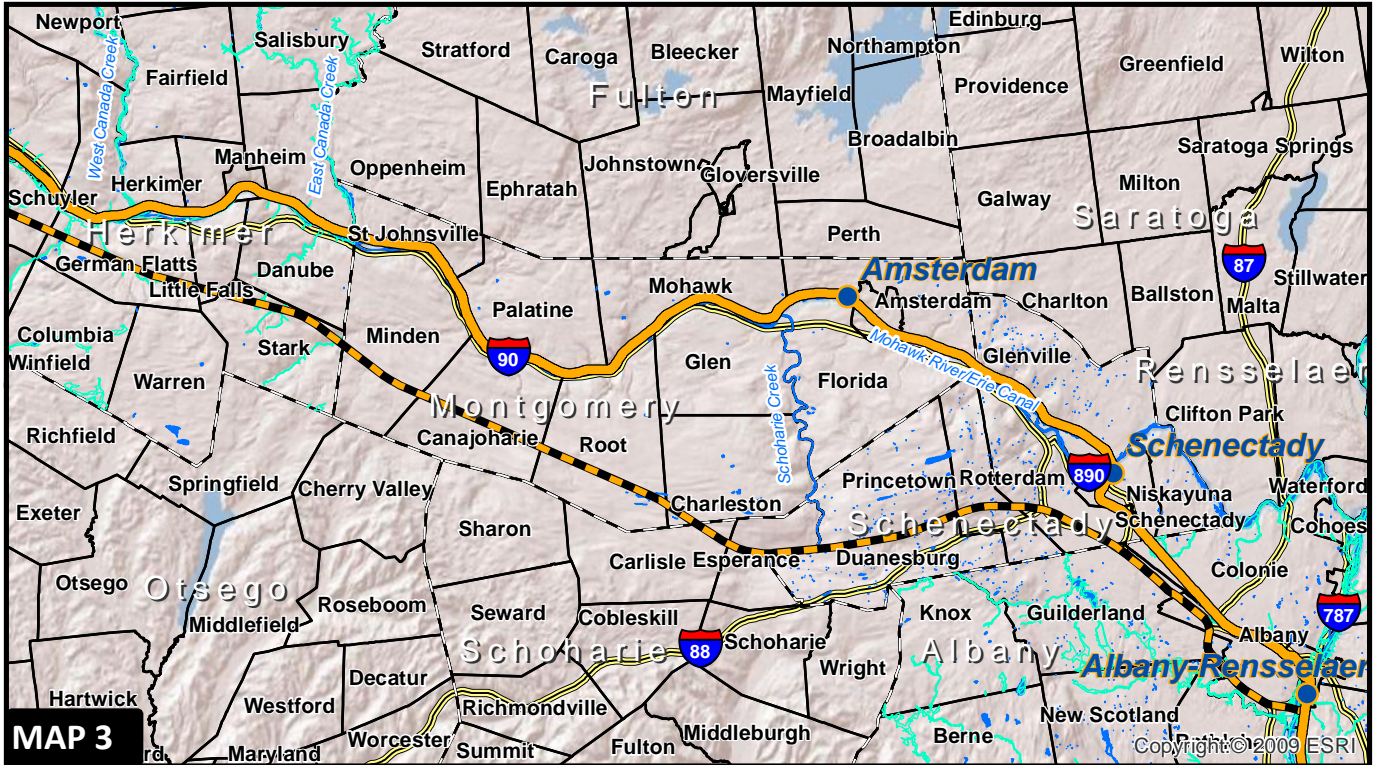
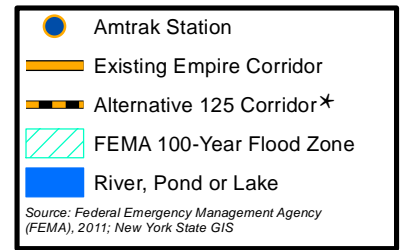
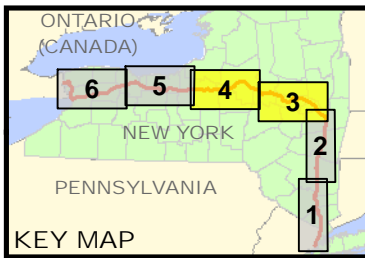


Surface Waters/Floodplains

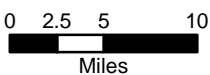
Exhibit G-8

Tier 1 EIS
High Speed Rail
Empire Corridor Program





*Alt. 125 as shown is a potential corridor used to analyze the potential operating characteristics, environmental impacts and cost for this speed (125 mph) threshold.

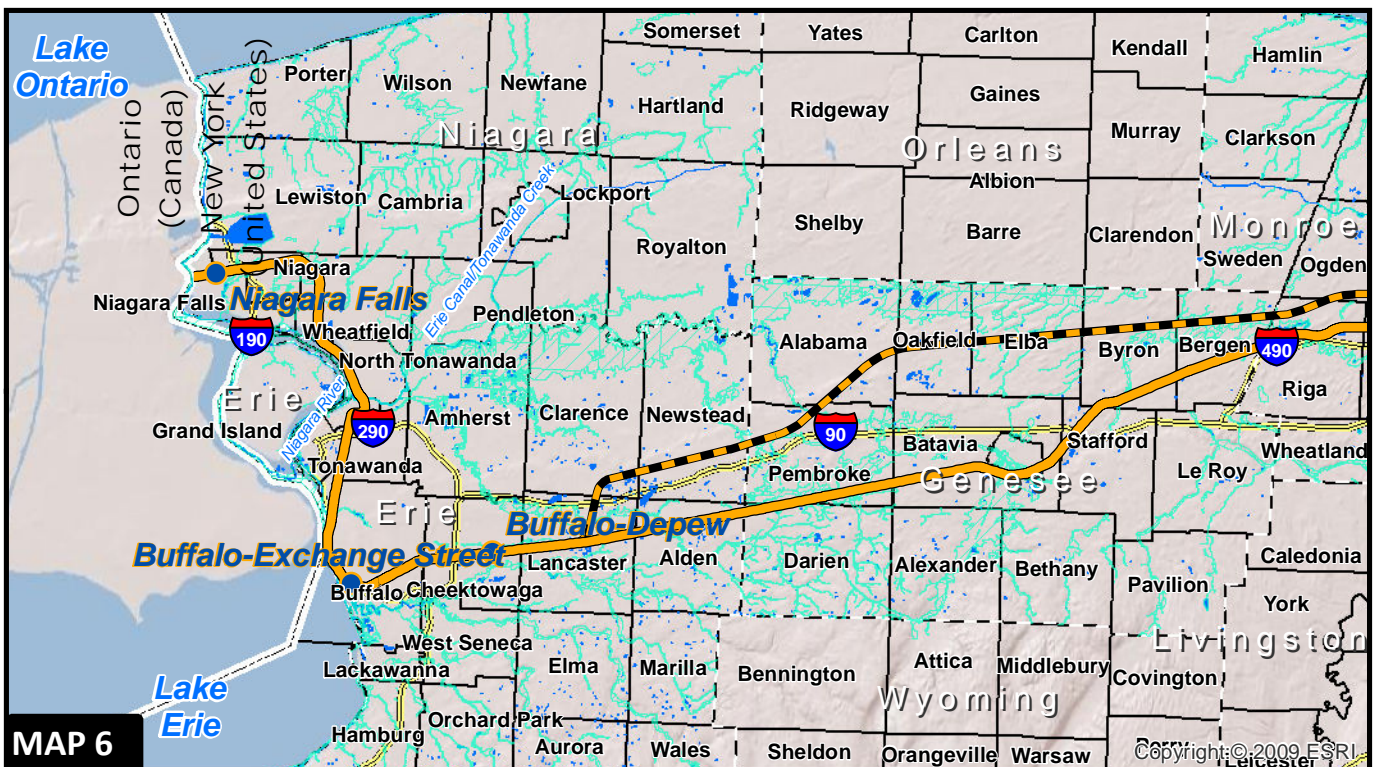
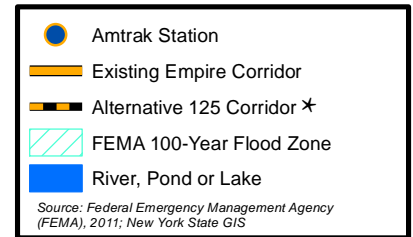
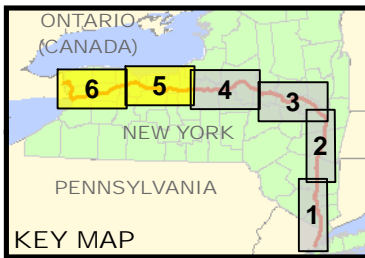


Surface Waters/Floodplains

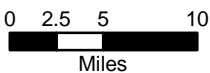
Exhibit G-8

Tier 1 EIS
High Speed Rail
Empire Corridor Program





*Alt. 125 as shown is a potential corridor used to analyze the potential operating characteristics, environmental impacts and cost for this speed (125 mph) threshold.



Surface Waters/Floodplains Exhibit G-8

Tier 1 EIS
High Speed Rail
Empire Corridor Program



Empire Corridor South

Alternative 90A improvements along Empire Corridor South would involve 47 waterway crossings. Alternative 90A would include construction of four miles of second track through urbanized areas of Manhattan (MPs 9 to 13), and 1.4 miles (MPs 23.8 to 25.2) of new track, extending under the Tappan Zee Bridge, for the Tarrytown Pocket Track/Interlocking. Both projects would occur over waterways associated with the tributaries of the Hudson River, including the Harlem River at MP 10. In addition, the rail line would be located directly adjacent to the Hudson River in these improvement areas. Depending on design, these improvements could have the potential to impact surface waters and water quality.

With Alternative 90A, there would be signal improvements proposed along 43 miles (MPs 32.8 and 75.8). In addition, along this section there would be 10 miles of new third track (MPs 53 to 63) and there would be improvements at the Poughkeepsie Yard/Storage Facility (MPs 71 to 75.8). North of Poughkeepsie and south of Albany-Rensselaer Station (MPs 75.8 to 140), proposed improvements would also include rock slope stabilization (MPs 105 to 130) and three new control points (CP 82, CP 99, and CP 136), as well as station improvements at Rhinecliff Station (high-level platforms) and Hudson Station (new Ferry Street Bridge and track realignments). In addition, the rail line would be located directly adjacent to the Hudson River in these improvement areas. Impacts to surface waters and water quality would be more likely in areas where there would be new track construction.

Empire Corridor West/Niagara Branch

Alternative 90A would also include replacement of the Livingston Avenue Bridge, which would pass over the Hudson River at the Rensselaer/Albany County Line; therefore, work on this bridge could have the potential to impact surface water and water quality associated with the Hudson River. With Alternative 90A, track improvements would include 10 miles of third track between MPs 169 and 179, and Amsterdam Station improvements along the west end of this segment. This entire 10-mile segment would closely adjoin the banks of the Mohawk River and would cross approximately nine waterways. Although impacts in these areas could be contained within the current right-of-way, there would still be potential for minimal impact of surface waters and water quality.

West of MP 175, work extending to MP 295 would consist of upgrading interlocking, automatic block signals, and control points. Alternative 90A would also include Syracuse Station track improvements (MPs 290 to 294) within this improvement segment. The alignment would continue to closely adjoin the banks of the Mohawk River and Erie Canal through MP 253. In addition to three crossings already included in the 10 miles of third track improvements mentioned above, the alignment would cross approximately 27 waterways between MPs 175 and 295. Although work would consist of upgrading signals, control points and interlocking, and this work would be performed within the current right-of-way, it could minimally impact surface waters and water quality within improvement areas.

Alternative 90A would include third track improvements along nine miles (MPs 373 to 382) west of Rochester station. Alternative 90A would also include the addition of a third track along 11 miles (MPs 382 to 393) in western Monroe and eastern Genesee Counties. Together, these improvements could impact approximately 16 streams, depending on eventual design.

Station improvements at the Buffalo-Depew Station (MPs 429.5 to 432.5) would not cross any waterways, and would be anticipated to have no impact on surface waters or water quality. However, the proposed double track (MPs QDN17 to QDN23.2) and Niagara Falls track improvements (MPs

QDN25 to QDN28) could have the potential to impact surface waters and water quality associated with seven waterway crossings.

6.2.3 Alternative 110

Improvements from this alternative would have approximately 218 surface water crossings.

Empire Corridor South

No additional work within Empire Corridor South, other than the potential for 47 waterway crossings for Alternative 90A, is proposed and additional surface waters impacts would not be anticipated to occur.

Empire Corridor West/Niagara Branch

There is only one difference in impacts between Alternative 110 and either 90A or 90B: Alternative 110 does not propose double track in the area of Scajaquada Creek (MP QDN6) in Erie County. Otherwise, track realignments and third and fourth track improvements would traverse the same surface waterways described in Alternatives 90A and 90B. These alternatives would include a crossing of the Hudson River and would closely adjoin sections of the Mohawk River and Erie Canal.

6.2.4 Alternative 125

Alternative 125 would potentially involve a total of 361 surface water crossings, as described below.

Empire Corridor South

No new improvements, beyond what is proposed for Alternative 90A, would be proposed for Alternative 125 along the majority of Empire Corridor South. Alternative 90A improvements along Empire Corridor South would involve 47 waterway crossings. However, roughly one mile of the proposed 125 mph track would extend south from Albany-Rensselaer Station to cross the Hudson River.

Empire Corridor West/Niagara Branch

Alternative 125 would involve a new sealed corridor. The potential for impacts to these waterway crossings are not yet fully known in Tier 1. In general, actions that would constitute direct impacts include the destruction or alteration of all or part of the surface water through diversion, channelization, embankments construction, dredging, filling, or other direct modifications of the waterway. In addition, direct impacts include the deterioration of the surface water quality through the direct discharge of pollutants and/or sediment to the waterway during construction.

In Albany County, Alternative 125 would cross three waterways: the Hudson River, and two crossings at Krum Kill. In addition to these crossings, there would also be one crossing in Albany County associated with Alternative 90A improvements of the Livingston Avenue Bridge over the Hudson River.

In Schenectady and Schoharie counties, Alternative 125 would cross approximately 27 waterways.

In addition in Schenectady County, Alternative 90A improvements would also occur under Alternative 125 and include one surface water crossing.

Alternative 125 would extend through Montgomery County, where there are approximately 21 waterway crossings. Alternative 90A improvements that would also occur under Alternative 125 would include 28 surface water crossings in Montgomery County.

In Herkimer County, Alternative 125 would cross approximately 39 waterways.

In Oneida County, Alternative 125 would extend through primarily rural properties and cross approximately 18 mapped waterways. Alternative 125 would also extend through primarily rural properties in Madison County and would cross approximately 20 waterways.

In Onondaga County, there would be approximately 20 water crossings in this county, six of which would be along the existing railroad through Syracuse.

In Cayuga County, Alternative 125 would cross 15 waterways. In Wayne County, Alternative 125 would cross approximately 43 waterways.

In Monroe County, Alternative 125 would cross 23 waterways, seven of which would be along the existing railroad through Rochester.

In Genesee County, Alternative 125 would extend through primarily rural properties and would cross approximately 25 mapped waterways.

New track proposed for Alternative 125 would cross six waterways in Erie County.

7. Navigable Waters

7.1 Existing Conditions

7.1.1 Empire Corridor South

All of the Build Alternatives follow the existing Empire Corridor South for the majority of its length, deviating only in Rensselaer County, where Alternative 125 splits off 1.6 miles south of where the existing Empire Corridor (the 90/110 Study Area) turns to the west. The Hudson River, a navigable water, is within the 300-foot railroad buffer in all counties in the Empire Corridor South segment. There are several navigable tributaries and inlets of the Hudson River that the railroad crosses. The Spuyten-Duyvil railroad bridge crosses over the Harlem River at MP 10. Two Metro-North railroad bridges in Westchester County pass over the Hudson River: Croton Bay (MPs 32.5 to 33) and Peekskill Bay (MP 42). The New Hamburg Railroad Bridge crosses over Wappinger Creek at MP 65.

7.1.2 Empire Corridor West/Niagara Branch: 90/110 Study Area

There are several navigable waterways along the 322 miles of the Empire Corridor West/Niagara Branch 90/110 Study Area. The Erie Canal and Mohawk River and other navigable waterways, and crossings of navigable waters, are described in the following section.

The railroad crosses the Hudson River over the Livingston Avenue Railroad bridge as it passes into **Albany County**. The Hudson River at this location is a navigable water, and the bridge is permitted by the U.S. Coast Guard.

The Erie Canal is part of the Mohawk River in **Schenectady County**. This waterway meanders in and out of the 300-foot buffer and crosses the railroad, as it passes west of the city of Schenectady (MP 160).

The Mohawk River and Erie Canal meander through the 300-foot buffer area as a single water channel in **Montgomery County** and the eastern part of **Herkimer County**, never crossing the railroad alignment. The Mohawk River and Erie Canal split at the town of Frankfort (MP 228). The Mohawk River and Erie Canal parallel the south side of the railroad before crossing the railroad and heading north. The Erie Canal crosses the railroad at approximately MP 231.5 and the Mohawk River crosses at approximately MP 234.

The Mohawk River and the Erie Canal continue into **Oneida County**, with both located north of the railroad. The Mohawk River crosses the railroad, extending from the north to the south side, just east of Rome (MP 248.5).

There are no navigable waters in **Madison County**. In **Onondaga County**, there are two navigable waterways: the Erie Canal and Onondaga Lake. Onondaga Lake parallels the north side of the railroad alignment for a small section through Syracuse. The Erie Canal crosses the alignment in this same area (MP 292) and connects to Onondaga Lake.

There are no navigable waters in the study area in **Cayuga County**. The Erie Canal is the only navigable water in the study area in **Wayne County**, meandering in and out of the 300-foot buffer within this county and crossing the railroad three times. It crosses once as part of the Clyde River near the town of Clyde (MPs 328 to 330), once near the town of Lyons (MP 335) and once just before Newark (MP 339.5).

The Genesee River and the Erie Canal are the two navigable waters within the study area in **Monroe County**. The Genesee River crosses the rail alignment in the city of Rochester (MP 371.5). The Erie Canal crosses the rail alignment just west of Rochester (MP 374.5). There are no navigable waters in the study area in **Genesee County**.

There are three navigable waters in the study area in **Erie County**. Two of these, Ellicott Creek and Scajaquada Creek, cross the railroad. The third, Lake Erie, is located within the 300-foot buffer on the west side of the railroad. Ellicott Creek crosses the rail alignment twice, once before entering Buffalo (MP 422.5) and a second time in Tonawanda (MP QDN12.5). Scajaquada Creek crosses the railroad once in Buffalo (MP QDN6).

There is one navigable water in **Niagara County**, Tonawanda Creek. The creek is also part of the Erie Canal and crosses the railroad in the center of Tonawanda (MP QDN13.5).

7.1.3 Empire Corridor West/Niagara Branch: 125 Study Area

There are several navigable waterways along the 308 miles of the Empire Corridor West/Niagara Branch 125 Study Area. The corridor crosses the Hudson River at MP QH143.5 as it passes into

Albany County. The Hudson River at this location is a navigable water.

There are no navigable waters in the study area through Schenectady, Schoharie, Montgomery, Herkimer, Oneida or Madison counties. The 125 Study Area bypasses several crossings of the Mohawk River/Erie Canal along the Empire Corridor West in Schenectady, Montgomery, Herkimer, and Oneida counties.

In **Onondaga County**, there are two navigable waterways: Onondaga Lake and the Erie Canal. Onondaga Lake parallels the north side of the corridor for a small section through Syracuse. The Erie Canal crosses the corridor in this same area (MP QH278.5) and connects to Onondaga Lake.

There are no navigable waters in the study area in **Cayuga** or **Wayne Counties**. The 125 Study Area bypasses several crossings of the Erie Canal and Clyde River along the Empire Corridor West in Wayne County. The Genesee River and the Erie Canal are two navigable waters within the study area in **Monroe County**.

The Genesee River crosses the corridor in the city of Rochester (MP QH356.75). The Erie Canal crosses the corridor just west of Rochester (MP QH359). There are no navigable waters in the study area in **Genesee County**.

There are three navigable waters in the study area in **Erie County**. Two of these, Ellicott Creek and Scajaquada Creek, cross the alignment. The third, Lake Erie, is located within the 300-foot buffer on the west side of the alignment. Ellicott Creek crosses the rail alignment twice, once before entering Buffalo (MP 411.5) and a second time in Tonawanda (MP QDN12.5). Scajaquada Creek crosses the railroad once in Buffalo (MP QDN6).

There is one navigable water in **Niagara County**, Tonawanda Creek. The creek is also part of the Erie Canal and crosses the railroad in the center of Tonawanda (MP QDN13.5).

7.2 Environmental Consequences

Chapter 4 of the Tier 1 Final EIS addresses and compares the impacts of the Preferred Alternative, Alternative 90B, to those of the other alternatives considered (refer to Section 4.8). The potential effects impacts of the Base Alternative and other Build Alternatives are described in more detail below.

7.2.1 Base Alternative

Empire Corridor South

The Base Alternative represents the baseline condition against which the alternatives are measured, and it incorporates improvements that had already been programmed and have been constructed. The Base Alternative will maintain weekday service frequencies. The Tier 1 Draft EIS addressed impacts of the eight projects comprising the Base Alternative on navigable waterways, which included work that spanned over three to four navigable waterways.

7.2.2 Alternative 90A

Empire Corridor South

Alternative 90A would include construction of four miles of second track through urbanized areas of Manhattan (MPs 9 to 13), and 1.4 miles (MPs 23.8 to 25.2) of new track, extending under the Tappan Zee Bridge, for the Tarrytown Pocket Track/Interlocking. The addition of a second track over the Harlem River at the Spuyten-Duyvil Railroad Bridge (MP 10) for the above improvements could have waterway impacts. The alignment in these improvement areas would also closely adjoin the Hudson River; however, work would likely remain within the existing right-of-way and would be unlikely to impact the Hudson River waterway.

With Alternative 90A, signal improvements proposed along 43 miles (MPs 32.8 to 75.8) would cross the Hudson River at two U.S. Coast Guard permitted bridges: one over Croton Bay (MPs 32.5 to 33) and the other over Peekskill Bay (MP 42). Even though work on the bridges would be minimal and likely contained within the existing right-of-way, it could have waterway impacts. In addition, the alignment in these improvement areas also closely adjoins the Hudson River; however, work would likely remain within the existing right-of-way and would be unlikely to impact the Hudson River waterway. The 10 miles of new third track (MPs 53 to 63) and improvements at the Poughkeepsie Yard/Storage Facility (MPs 71 to 75.8) would be unlikely to impact navigable waters.

North of Poughkeepsie and south of Albany-Rensselaer Station (MPs 75.8 to 140), proposed improvements would include rock slope stabilization (MPs 105 to 130), three new control points (CP 82, CP 99, and CP 136), as well as station improvements at Rhinecliff Station (high-level platforms) and Hudson Station (new Ferry Street Bridge and track realignments). It is anticipated that these improvements would occur largely within the right-of-way and impacts to navigable waters would not be anticipated. Alternative 90A also includes replacement of the Livingston Avenue Bridge, which would pass over the Hudson River and has been permitted by the U.S. Coast Guard. Improvements and replacement activities could result in permanent and temporary waterway impacts, depending on the design.

Empire Corridor West/Niagara Branch

This entire 10-mile segment would closely adjoin the banks of the Mohawk River; however, impacts in these areas would be contained within the current right-of-way, and there would be little potential to impact the Mohawk River.

Upgrades to interlockings and automatic block signals would also occur at three control points in the Cities of Amsterdam, Utica, and Rome (CP 175, CP 239, and CP 248, respectively) and Amsterdam Station improvements (MP 177.6). The control points and station improvements would be located within the boundaries of the principal aquifer, which would generally underlie the Mohawk River. These improvements would occur close to the banks of the Mohawk River; however, impacts in these areas would be contained within the current right-of-way, and there would be little potential to impact the Mohawk River. Alternative 90A would also include Syracuse track improvements of upgrading interlocking, automatic block signals, and control points and track improvements at the Syracuse Station (MPs 290 to 294). These improvements would involve the crossing of the Erie Canal and could also result in permanent and temporary impacts.

Rochester third track improvements along nine miles (MPs 373 to 382), west of the Rochester

Station, would involve a crossing of the Erie Canal (MP 374.5). Improvements and construction activities at this crossing could result in permanent and temporary waterway impacts. Alternative 90A also would include the addition of a third track along 11 miles (MPs 382 to 393) in western Monroe and eastern Genesee Counties, which would not be anticipated to impact navigable waters.

Station improvements at the Buffalo-Depew Station (MPs 429.5 to 432.5) and the proposed double track (MPs QDN17 to QDN23.2) would not cross navigable waters.

7.2.3 Alternative 110

Empire Corridor South

No additional work within Empire Corridor South, other than that described above for Alternative 90A, is proposed.

Empire Corridor West/Niagara Branch

Third and fourth track improvements for Alternative 110 would start at MP 160 in the City of Schenectady, and extend west to MP 430, east of Buffalo. Third and fourth track improvements would impact five navigable waters at 11 crossings in Schenectady, Herkimer, Oneida, Onondaga, Wayne, Monroe, and Erie Counties. These are the same crossings as described in Alternatives 90A and 90B. No other impacts other than those described above for Alternatives 90A and 90B would be anticipated.

7.2.4 Alternative 125

Empire Corridor South

No new improvements, beyond what is proposed for Alternative 90A, would be proposed for Alternative 125 along the majority of Empire Corridor South. However, roughly one mile of the proposed 125 mph track would extend south from Albany-Rensselaer Station to cross the Hudson River (MP 143.4). Proposed improvements would cross the Hudson River and construction of a new bridge over the Hudson River would also result in temporary and permanent impacts and would require permitting by the U.S. ACE and the USCG.

Empire Corridor West/Niagara Branch

The new Alternative 125 alignment would cross the Erie Canal (MP QH278.5) in Syracuse, as well as the Genesee River (MP QH356.75) and the Erie Canal (MP QH359) near Rochester. Track improvements at these crossings could result in permanent and temporary impacts as described above, and may require clearance and permitting by the U.S. ACE and the USCG. In addition to the above three crossings, Alternative 125 would also cross Ellicott Creek (MP QH411.5) before converging with the existing Empire Corridor east of Buffalo. Work over or within Ellicott Creek could result in permanent and temporary impacts.

8. Floodplains

8.1 Existing Conditions

8.1.1 Empire Corridor South

The Empire Corridor South, from New York City to Rensselaer, extends 142 miles and in many locations closely follows the east bank of the Hudson River. All of the Build Alternatives follow the existing Empire Corridor South for the majority of its length, deviating only in Rensselaer County, where the 125 Study Area splits off 1.6 miles south of where the existing Empire Corridor (the 90/110 Study Area) turns to the west. This corridor segment includes the study area counties of New York County (Manhattan Borough), Bronx County, Westchester County, Putnam County, Dutchess County, Columbia County, and Rensselaer County. The entire corridor in this segment is located in the Lower Hudson River Watershed.

The rail corridor extends approximately 10.3 miles north through **Manhattan (New York County)** from its southern terminus, daylighting from a rail tunnel just north of Milepost 5. The Hudson River is generally within 150 to 300 feet of the western side of the railroad for the majority of the county and floodplains associated with the Hudson River are located within 300 feet of the rail centerline.

After crossing the Harlem River, the railroad enters and extends through **Bronx County** after crossing the Harlem River for a distance of approximately 2.6 miles. There are no waterway crossings in Bronx County; however, the corridor closely adjoins the west bank of the Hudson River throughout the county and approximately 179 acres of mapped 100-year floodplains are located within 300 feet of the railroad centerline.

The railroad continues to closely adjoin the Hudson River through 31.5 miles of the rail corridor as it extends through **Westchester County**, largely remaining within 50 to 500 feet of the river. There are approximately 703 acres of mapped 100-year floodplains within 300 feet of the rail centerline, associated with the Hudson River and its tributaries (encountered at 23 waterway crossings) in this county.

The railroad traverses through 9.3 miles of **Putnam County**, largely remaining within 50 to 500 feet of the Hudson River. The majority of the rail corridor remains in close proximity to the Hudson River, with the exception of a 1-mile section south of Cold Springs (MPs 51 to 52). There are approximately 12 waterway crossings in this county, including several bridges over the inlets and coves of the Hudson River (MPs 51, 52 [Foundry Cove], and 53). There are approximately 340 acres of mapped 100-year floodplains within 300 feet of the railroad centerline associated with the Hudson River and its tributaries.

The rail corridor traverses approximately 45.6 miles across **Dutchess County**. The majority of the railroad is within 50 to 300 feet of the Hudson River and crosses several coves and inlets of the river as it passes through the county. There are approximately 1,766 acres of 100-year floodplains mapped within 300 feet of the rail centerline associated with the Hudson River and the roughly 38 waterway crossings in this county.

The rail corridor continues to closely adjoin the Hudson River through the majority of the 29.5 miles of the rail corridor as it extends through **Columbia County**, largely remaining within 50 to 300 feet of the river. There are approximately 22 waterway crossings in this county, including several bridges

over the inlets of the Hudson River. Approximately 1,244 acres of 100-year floodplains are located within 300 feet of the rail centerline in this county associated with the Hudson River and its numerous tributaries.

The railroad extends 13.4 miles through **Rensselaer County**, paralleling the Hudson River and closely adjoining the river through the southern portion of the county. In the 90/110 Study Area, there are roughly 751 acres of 100-year floodplains. In the 125 Study Area, there are 752 acres of 100-year floodplains. These floodplains are primarily associated with the Hudson River.

8.1.2 Empire Corridor West/Niagara Branch: 90/110 Study Area

The 322-mile-long Empire Corridor West/Niagara Branch for the 90/110 Study Area, with the exception of the metropolitan areas within and surrounding the major cities, has a distinctively more rural agricultural character than the segment to the south. The Empire Corridor West generally follows or parallels several geographic features, including the Mohawk River or New York Canal System, and the New York State Thruway. The Niagara Branch turns north at Buffalo on Lake Erie, generally paralleling the Lake Erie shoreline and then extending north along the Niagara River.

The railroad crosses over the Hudson River (MP 143) at the Livingston Avenue Bridge and enters **Albany County**. The railroad extends approximately 11.8 miles across Albany County. The 600-foot-wide study area in this county contains approximately 90 acres of 100-year floodplains associated with the Hudson River and other crossing waterways, including Patroons Creek, Rensselaer Lake, and Lisha Kill. The southeastern portion of Albany County is within the Lower Hudson River watershed, but just after the railroad crosses Rensselaer Lake (MP 154), there is a transition to Mohawk River watershed.

The entire 14.7 miles of the Empire Corridor that pass through **Schenectady County** are located within the Mohawk River watershed. There are approximately nine waterway crossings in Schenectady County, including the Mohawk/Erie Canal that parallels the railroad west of Schenectady Station, extending between 75 feet to 1 ¼ miles of the railroad. There are approximately 179 acres of 100-year floodplains within 300 feet of the rail centerline.

The railroad continues to closely adjoin the north banks of the Mohawk River/Erie Canal through the 40.3 miles of the rail corridor as it extends through **Montgomery County**, largely remaining within 50 to 1,000 feet of the river/canal. The entire county remains within the Mohawk River watershed, and there are approximately 35 waterway crossings in this county. There are approximately 7 acres of 100-year floodplains within 300 feet of the railroad.

The railroad traverses through **Herkimer County** for approximately 25.3 miles. There are approximately 904 acres of 100-year floodplains within 300 feet of the rail centerline. The floodplains are associated with the Mohawk River/ Erie Canal, which parallel the railroad throughout the county.

The Empire Corridor extends 28.6 miles through **Oneida County**, paralleling the Erie Canal through the eastern half of the county between Utica on the east and Rome. The eastern half of the county remains within the Mohawk River watershed, but west of the Rome Station (MP 261.5) the railroad enters the Oswego River/Finger Lakes watershed. There are approximately 780 acres of mapped 100-year floodplains within the study area. These floodplains are associated with certain

waterbodies that cross the railroad in Oneida County (11 in total), including the Mohawk River, Mud Creek, Stony Creek, and Oneida Creek.

Madison County is entirely within the Oswego River/Finger Lakes watershed, and the railroad traverses through approximately 13.8 miles of this county. In the eastern half of the county, the railroad generally parallels the Old Erie Canal, with the canal within 100 to 1,000 feet on the north side, before it crosses the railroad around MP 272 and heads south, out of the study area. There are approximately 226 acres of 100-year floodplains within 300 feet of the rail centerline. These floodplains are associated with certain waterbodies that cross the railroad in Madison County (11 in total), including Old Erie Canal, Cowelson Creek, Canastota Creek, Owlville Creek, and Canseraga Creek.

The railroad extends 31.3 miles through **Onondaga County**, roughly paralleling the New York State Thruway and skirting the southeast shores of Onondaga Lake in the city of Syracuse. There are approximately 712 acres of 100-year floodplains in the study area associated with certain waterway crossings in this county (16 in all). Floodplains adjoin Pools Brook, Lake Brook, Limestone Creek, Butternut Creek, Onondaga Lake itself and its tributaries (Ley Creek, Geddes Brook, Ninemile Creek), and Old Erie Canal. All waters are within the Oswego River/Finger Lakes watershed in this county.

The Empire Corridor extends 11.5 miles through **Cayuga County**, roughly paralleling the New York State Thruway. There are 316 acres of 100-year floodplains mapped in the study area in this county. These floodplains are associated with the five water body crossings: the Seneca River (which crosses the railroad at the west end of the county) and its tributaries Putnam Brook, Coldspring Brook, Owasco Outlet, and Swamp Brook.

The railroad extends 37.1 miles through rural **Wayne County**, paralleling portions of the Erie Canal and Route 31. The Erie Canal meanders back and forth along the railroad for much of the county, crossing the railroad twice. Most (98%) of the railroad is located within the Oswego River/Finger Lakes watershed, and the railroad enters the Lake Ontario Tributaries watershed (MP 357) on the western end. There are approximately 18 waterway crossings in this county, including the two Erie Canal crossings mentioned above, and approximately 720 acres of 100-year floodplains within the study area.

The railroad extends 30.9 miles through **Monroe County**, closely paralleling the Erie Canal from the county's eastern border to just west of the town of Fairport (MP 361.5). The canal extends close to the study area west of Rochester. The county remains in the Lake Ontario Tributaries watershed until just east of Rochester where the railroad enters the Genesee River watershed (MP 370.5), just before crossing the Genesee River (MP 371.5). There are approximately 237 acres of 100-year floodplains associated with the certain waterway crossings within the study area (19 in all), including the Erie Canal and Genesee River.

The railroad traverses approximately 30 miles through **Genesee County**, and generally follows Route 33. The railroad remains in the Genesee River watershed through the eastern portion of the county and passes into the Niagara River/Lake Erie watershed just before the town of Batavia (MP 401). There are 234 acres of 100-year floodplains within the study area associated with certain waterway crossings in the county (17 in total), including Black Creek and Tonawanda Creek, and Murder Creek.

The rail corridor extends 32.7 miles through **Erie County**. The Niagara River/Lake Erie watershed is the only watershed the railroad traverses in this county. There are approximately 15 acres of 100-

year floodplains within the study area associated with waterway crossings in this county, including Ellicot Creek, Scajaquada Creek, and Erie Canal.

The railroad extends 14.4 miles through **Niagara County**, to the north of Erie County. The Niagara River/Lake Erie watershed is the only watershed the rail corridor traverses in this county. There are approximately 22 acres of 100-year floodplains within the study area associated with waterway crossings, including Sawyer Creek, Bergholtz Creek, Cayuga Creek, and Gill Creek.

8.1.3 Empire Corridor West/Niagara Branch: 125 Study Area

The 125 Study Area crosses over the Hudson River (MP QH143.5) and enters **Albany County**. Currently, there is not an existing bridge structure that supports this alignment over the Hudson River. The corridor extends approximately 14 miles across Albany County. The 600-foot-wide study area in this county contains approximately 43 acres of 100-year floodplains associated with the Hudson River and other crossing waterways, including Krum Kill. This portion of Albany County is within the Lower Hudson River watershed.

The corridor extends 17 miles through **Schenectady County** and remains in the Lower Hudson River watershed for approximately 1.5 miles before crossing into the Mohawk River watershed. It then passes back into the Lower Hudson River watershed for a majority of the county before heading back into the Mohawk River watershed, just before MP QH171. The remainder of the county remains in the Mohawk River watershed. There are approximately 18 waterway crossings in Schenectady County, including Bonny Brook and numerous small tributaries to Norman's Kill to the south. There are approximately 40 acres of 100-year floodplains within 300 feet of the rail centerline.

The corridor remains in the Mohawk River watershed throughout the 6.5 miles in **Schoharie County**. The corridor would have approximately nine waterway crossings, including Schoharie Creek and several crossings of Fly Creek, and approximately 131 acres of 100-year floodplains lie within 300 feet of the rail centerline. The corridor continues within the Mohawk River watershed through 21.3 miles as it extends through **Montgomery County**. There are approximately 21 waterway crossings in this county, including Fly Creek, Flat Creek and Canajoharie Creek. There are no 100-year floodplains within 300 feet of the rail centerline.

The corridor then traverses through **Herkimer County** for approximately 25.3 miles. There are approximately 45 acres of 100-year floodplains within 300 feet of the rail centerline. The floodplains are associated with crossings of Otsquago Creek, Ohisha Creek, Fulmer Creek and numerous smaller tributaries.

The 125 Study Area extends 22 miles through **Oneida County**, remaining in the Mohawk River watershed in the eastern half of the county before entering into the Oswego River/Finger Lakes watershed at approximately MP QH243.5. There are approximately 81 acres of mapped 100-year floodplains within the study area. These floodplains are associated with certain waterbodies that cross the proposed centerline in Oneida County (18 in total), including Palmer Creek, Sauquoit Creek, Mud Creek, Sherman Brook, Oriskany Creek and Sconondoa Creek.

Madison County is entirely within the Oswego River/Finger Lakes watershed, and the corridor traverses through approximately 14.6 miles of this county. There are approximately 110 acres of 100-year floodplains within 300 feet of the proposed centerline. These floodplains are associated with certain waterbodies that cross the corridor in Madison County (20 in total), including Oneida

Creek, Cowelson Creek, Dutch Settlement Creek, Canastota Creek, Owlville Creek, Canaseraga Creek, Old Erie Canal and Chittenango Creek.

The corridor extends 31.6 miles through **Onondaga County**, roughly paralleling the New York State Thruway and skirting the southeast shores of Onondaga Lake in the city of Syracuse. There are approximately 547 acres of 100-year floodplains in the study area associated with certain waterway crossings in this county (20 in all). Floodplains adjoin Pools Brook, Lake Brook, Limestone Creek, Butternut Creek, Onondaga Lake itself and its tributaries (Ley Creek, Geddes Brook, Ninemile Creek), Deadman Creek and Old Erie Canal. All waters are within the Oswego River/Finger Lakes watershed in this county.

The 125 Study Area extends 11.1 miles through **Cayuga County** and remains in the Oswego River/Finger Lakes watershed. There are approximately 45 acres of 100-year floodplains mapped in the study area in this county. These floodplains are associated with the 15 water body crossings: the Seneca River (which crosses the railroad at the east end of the county) and its tributaries, Muskrat Creek and Spring Lake Outlet.

The corridor extends 35.5 miles through rural **Wayne County**, primarily remaining within the Oswego River/Finger Lakes watershed, with a small portion in the eastern portion of the county crossing into the Lake Ontario Tributaries watershed before crossing back to Oswego River/Finger Lakes watershed. There are approximately 43 waterway crossings in this county and approximately 8 acres of 100-year floodplains within the study area associated with stream crossings in the City of Rose.

The corridor extends 29.5 miles through **Monroe County**. The county remains in the Lake Ontario Tributaries watershed until just east of Rochester where the railroad enters the Genesee River watershed, just before crossing the Genesee River (MP QH356). There are approximately 296 acres of 100-year floodplains associated with the certain waterway crossings within the study area (23 in all), including Thomas Creek, Irondequoit Creek, Allen Creek, Erie Canal, Genesee River and Little Black Creek.

The 125 Study Area traverses approximately 29.7 miles through **Genesee County**, and crosses the Genesee River watershed, Lake Ontario Tributaries watershed and the Niagara River/Lake Erie watershed east to west. There are approximately 247 acres of 100-year floodplains within the study area associated with certain waterway crossing in the county (25 in total), including Black Creek, Oak Orchard Creek, Whitney Creek, Tonawanda Creek and Murder Creek.

The rail corridor extends 24.3 miles through **Erie County**. The Niagara River/Lake Erie watershed is the only watershed the railroad traverses in this county. There are approximately 20 acres of 100-year floodplains within the study area associated with waterway crossings in this county, including Ransom Creek, Ellicot Creek, Scajaquada Creek, and Erie Canal.

The railroad corridor extends 14.4 miles through **Niagara County**, to the north of Erie County. The Niagara River/Lake Erie watershed is the only watershed the rail corridor traverses in this county. There are approximately 22 acres of 100-year floodplains within the study area associated with waterway crossings, including Sawyer Creek, Bergholtz Creek, Cayuga Creek, and Gill Creek.

8.2 Environmental Consequences

Chapter 4 of the Tier 1 Final EIS addresses and compares the impacts of the Preferred Alternative, Alternative 90B, to those of the other alternatives considered (refer to Section 4.9). The potential impacts of the Base Alternative and the other Build Alternatives are described in more detail below. Because the extent to which these alternatives will involve encroachments and fill that may increase flood hazards is not yet known, the assessment identified the potential for impacts. The discussion below identifies the locations where the various alternatives considered may incur work within or proximal to floodplains and potentially involve impacts on floodplains.

8.2.1 Base Alternative

The Base Alternative represents the baseline condition against which the alternatives are measured and incorporates improvements that have already been programmed and have been constructed. The Base Alternative will maintain weekday service frequencies. The Tier 1 Draft EIS addressed the potential impacts of the eight projects on floodplains.

8.2.2 Alternative 90A

Empire Corridor South

Alternative 90A would include construction of four miles of second track through urbanized areas of Manhattan (MPs 9 to 13), and 1.4 miles (MPs 23.8 to 25.2) of new track, extending under the Tappan Zee Bridge, for the Tarrytown Pocket Track/Interlocking. Both projects would encroach on floodplains associated with the Hudson River and minor tributaries, such as the Harlem River at MP 10.

With Alternative 90A, signal improvements proposed along 43 miles (MPs 32.8 and 75.8) would extend through floodplain areas (primarily associated with the Hudson River and its tributaries to the east). However, work could be contained within the right-of-way and minimal impacts to floodplains are expected from the signal improvements. Along this section, portions of the 10 miles of new third track (MPs 53 to 63) and improvements at the Poughkeepsie Yard/Storage Facility (MPs 71 to 75.8) would be located within mapped floodplains associated with the Hudson River and its tributaries such as Breakneck Brook, Catskill Aqueduct, Cascade Brook, Gordons Brook and Fishkill Creek.

North of Poughkeepsie and south of Albany-Rensselaer Station (MPs 75.8 to 140), proposed improvements would include rock slope stabilization (MPs 105 to 130) and three new control points (CP 82, CP 99, and CP 136), as well as station improvements at Rhinecliff Station (high-level platforms) and Hudson Station (new Ferry Street Bridge and track realignments). Much of the railroad alignment in this area would pass through Hudson River floodplains and floodplains of tributaries east of the Hudson River, but some of these improvements that are at-grade may have a minimal impact on flooding characteristics. Alternative 90A would also include replacement of the Livingston Avenue Bridge, which would pass over the Hudson River and its floodplain at the Rensselaer/Albany County Line.

Empire Corridor West/Niagara Branch

With Alternative 90A, track improvements would include 10 miles of third track between MPs 169 and 179, and Amsterdam Station improvements along the west end of this segment. This entire 10 mile segment would closely adjoin the banks of the Mohawk River through Schenectady and Montgomery counties. There are no floodplains located along the track between these mileposts. Although impacts in these areas may be contained within the current right-of-way, there would still be potential for minimal encroachment on floodplains in these areas.

West of MP 175, the railroad alignment would continue to closely adjoin the banks of the Mohawk River and Erie Canal through MP 253. Floodplains associated with the Mohawk River and the Erie Canal, as well as numerous tributaries would be located along the track. In Montgomery County, the alignment crosses associated floodplains between MP200 and MP202. From MPs 253 to 295, the alignment would cross numerous waterways and their associated floodplains. Since this work would be performed within the current right-of-way, it would be unlikely to impact the floodplain through this segment.

In the area of the Syracuse Station track improvements, the alternative would pass through floodplains associated with Ley Creek (MP 287), the Erie Canal and Onondaga Lake (MPs 292.5 to 292.75).

Rochester third track improvements are proposed along nine miles (MPs 373 to 382) west of Rochester Station. These third track improvements could have the potential to impact floodplains associated with the Erie Canal (MP 374.5) and Little Black Creek (MPs 377.5 to 378.5).

Alternative 90A would also include the addition of a third track along 11 miles (MPs 382 to 393) in western Monroe and eastern Genesee Counties. The addition of this track will encroach on floodplains associated with Little Black Creek, Robins Brook and Black Creek.

The proposed double track (MPs QDN17 to QDN23.2) could have the potential to impact floodplains associated with Bergholtz Creek (MP QDN20) and Cayuga Creek (MP QDN21.5).

8.2.3 Alternative 110

With Alternative 110, Empire Service would match the increased frequency of service for Alternative 90B and would provide further improvements in travel times, with 273 miles of exclusive third track between Schenectady and Buffalo. This track would be further offset 30 feet, and additional infrastructure improvements included, to accommodate higher speeds. Alternative 110 would also add 59 miles of fourth track in six locations.

Empire Corridor South

No additional work within Empire Corridor South, other than that proposed for Alternative 90A, would occur and additional floodplain impacts would not be anticipated.

Empire Corridor West/Niagara Branch

With Alternative 110, track realignments and third and fourth track improvements would traverse the same floodplain areas as described in Alternatives 90A and 90B (with the exception of Scajaquada

Creek [MP QDN6.3] in Erie County), but may have greater impacts as the tracks are further offset from the existing tracks. No other floodplain encroachments other than those described above for Alternatives 90A and 90B would be anticipated for Alternative 110.

8.2.4 Alternative 125

Empire Corridor South

No new improvements, beyond what is proposed for Alternative 90A, would be proposed for Alternative 125 along the majority of Empire Corridor South. However, roughly one mile of the proposed 125 mph track would extend south from Albany-Rensselaer Station to cross the Hudson River. Proposed improvements would have the potential to encroach on floodplains associated with Mill Creek and the Hudson River over this one-mile segment.

Empire Corridor West/Niagara Branch

After crossing the Hudson River, Alternative 125 would extend through Albany and Schenectady Counties over a distance of 20 miles, primarily following the New York State Thruway (I-87/I-90) over most of this distance. In Albany County, Alternative 125 would have the potential to impact floodplains associated with the Hudson River (MPs QH143 to QH144) and Krum Kill (MP QH147.75). In Schenectady and Schoharie Counties, Alternative 125 would cross approximately 27 waterways. Floodplains exist along these waterways in Schenectady County between MPs QH161 and QH162, associated with Watervliet Reservoir, and at MP QH174, associated with Schoharie Creek. It is likely that construction of Alternative 125 would have the potential to impact these floodplains. In addition, impacts to floodplains from Alternative 90A would also occur in Schenectady County as part of Alternative 125.

Alternative 125 would extend through Montgomery County, where there are approximately 21 waterway crossings, including Fly Creek, Flat Creek, Canajoharie Creek and numerous unnamed tributaries. No floodplains exist along Alternative 125 in Montgomery County. However, impacts to floodplains from Alternative 90A would also occur in Montgomery County as part of Alternative 125.

In Herkimer County, Alternative 125 would cross approximately 39 waterways and floodplains associated with Otsquago Creek (MP QH202.5), Ohisha Creek (MP QH206.5), Fulmer Creek (MP QH212), Steele Creek (MP QH218) and an unnamed tributary to Moyer Creek (MP QH221.5).

In Oneida County, Alternative 125 would extend through primarily rural areas and would cross approximately 18 mapped waterways, including floodplains associated with Palmer Creek (MP QH229.5), Sauquoit Creek (MP QH230.25), Sherman Brook and Oriskany Creek (MPs QH235.5 to QH236), Dean's Creek (MP QH240), and Sconondoa Creek (MP QH248). Alternative 125 would enter the floodplain of Oneida Creek as it crosses into Madison County.

In Madison County, Alternative 125 would extend through primarily rural areas and would cross floodplains associated with Oneida Creek (MP QH249.5), Cowelson Creek (MP QH253), an unnamed tributary to the Erie Canal (MP QH253.5), Canastota Creek, Owlville Creek and its tributaries (MPs QH257.75 and QH258.25), Canaseraga Creek (MP QH260), and Chittenango Creek MP QH262.25).

In Onondaga County, there would be approximately 20 waterway crossings. The alignment would cross floodplains associated with Pools Brook (MP QH264.75) and would be within, or adjacent to,

floodplains associated with Lake Brook and Limestone Creek for approximately two miles (MPs QH266.25 to QH268.25) just before rejoining the existing Empire Corridor. The alternative would then cross floodplains associated with Butternut Creek (MP QH270.5) and Ley Creek (MP QH272.75) in East Syracuse, before crossing floodplains associated with the Erie Canal and Onondaga Lake for roughly two miles (MPs QH276.5 to QH279.5) through the City of Syracuse. Just east of Syracuse, the alignment would be in, or adjacent to, floodplains associated with Geddes Brook and Nine Mile Creek for roughly two-and-a-half miles (MPs QH281.75 to QH284) before splitting from the exiting Empire Corridor. The alignment would pass through areas of floodplains associated with Dead Man Creek (MP QH289.75), the Seneca River and Cross Lake (MP QH292), in the western portion of the county.

In Cayuga County, Alternative 125 would cross three floodplain areas associated with the Seneca River (MP QH295.75), Muskrat Creek (MP QH297.5) and a tributary of the Seneca River (MP QH304).

In Wayne County, Alternative 125 would cross approximately 43 waterways. Alternative 125 would also cross a floodplain associated with Sodus Creek (QH316 to QH317).

In Monroe County, Alternative 125 would cross floodplains associated with Thomas Creek and several of its tributaries (MPs QH343.5 and QH345.5 to QH346.5), Irondequoit Creek (MP QH347.5), Allen Creek (MP QH350.25), the Genesee River (MP QH356.25) and the Erie Canal (MP QH359). Also, just after the alignment diverges from the existing Empire Corridor east of Rochester, Alternative 125 would pass in and out of the Little Black Creek floodplain for approximately four miles (MPs QH361.5 to QH365.5).

In Genesee County, Alternative 125 would extend through primarily rural areas and cross approximately 25 mapped waterways. The alignment would cross floodplains associated with Black Creek and its tributaries (MPs QH372.25, QH373.25, QH374.25 and QH375.75 to QH377), unnamed tributaries to Spring Creek (MPs QH382 to QH383), Oak Orchard Creek and its tributaries (MPs QH383.5, QH385, QH385.5, QH386 and QH388), Tonawanda Creek (MP QH397.5) and Murder Creek and its tributaries (MPs QH400.5 to QH401.25).

Alternative 125 would cross floodplains associated with Ellicott Creek (MP QH411.5) in Erie County. No impacts to floodplains would occur from Alternative 125 in Niagara County other than those described in Alternative 90A.

9. Wetlands

9.1 Existing Conditions

The following sections review the federal and state wetlands classifications for the study area. The U.S. Fish and Wildlife Classification System defines five major wetland and deepwater systems: marine, estuarine, riverine, palustrine (non-tidal freshwater or salinities less than 0.5 parts per thousand), and lacustrine. The state classifications for tidal and freshwater wetlands are shown in Exhibit G-10 and Exhibit G-11.

- **Estuarine Deepwater** (specific classes of estuarine subtidal unconsolidated bottom), comprising 16 percent of NWI wetlands along the 90/110 Study Area and 20 percent along the 125 Study Area;
- **Estuarine Wetlands** (specific classes of estuarine intertidal unconsolidated shore/emergent) comprising 1 percent of NWI wetlands along both the existing Empire Corridor (90/110 Study

Area) and 2 percent along the 125 Study Area;

- **Riverine** (associated with rivers, including riverine intertidal upper/lower perennial and two occurrences of riverine intermittent), comprising 29 percent of NWI wetlands along both the existing Empire Corridor (90/110 Study Area) and the 125 Study Area;
- **Freshwater (or Palustrine) Emergent Wetlands**, comprising 14 percent of NWI wetlands along the existing Empire Corridor (90/110 Study Area) and 9 percent along the 125 Study Area;
- **Freshwater Forested/Shrub Wetland** (including specific classes of palustrine scrub shrub/forested), comprising 34 percent of NWI wetlands along the existing Empire Corridor (90/110 Study Area) and 35 percent along the 125 Study Area;
- **Freshwater Pond**, comprising 4 percent of NWI wetlands along both the existing Empire Corridor (90/110 Study Area) and the 125 Study Area;
- **Lakes** (larger than ponds, specific classes of lacustrine limnetic/littoral unconsolidated bottom), comprising 2 percent of NWI wetlands along both the existing Empire Corridor (90/110 Study Area) and the 125 Study Area.

The NYSDEC tidal wetland categories mapped in the Empire Corridor include open water (26% of tidal wetlands); broad-leaf vegetation (3%); graminoid vegetation (5%); coastal shoals, bars, and mudflats (1%); vegetated coastal shoals, bars, and mudflats (1%); swamp shrub (1%); and swamp tree (2%). The tidal wetland percentages for the 90/110 and the 125 Study Areas are the same, although the mapped Adjacent Areas to Tidal Wetlands differ. The 90/110 Study Area had approximately 5,550 acres of mapped Adjacent Areas to Tidal Wetlands. The 125 Study Area had less mapped Adjacent Areas to Tidal Wetlands at 5,458 acres.

In the existing Empire Corridor (90/110 Study area), NYSDEC freshwater wetlands include the highest value wetlands, Class I, which comprises 40 percent of total NYSDEC freshwater wetlands. Class II wetlands comprise 55 percent of NYSDEC freshwater wetlands in the study area, compared to Class III (3%), and Class IV (2%) of total freshwater wetlands in the study area counties.

In the 125 Study Area, NYSDEC freshwater wetlands include the highest value wetlands, Class I, which comprises 54 percent of total NYSDEC freshwater wetlands. Class II wetlands comprise 32 percent of NYSDEC freshwater wetlands in the study area, compared to Class III (13%), and Class IV (less than 1%) of total freshwater wetlands in the study area counties.

9.1.1 Empire Corridor South

Wetlands in the 600-foot-wide study area along Empire Corridor South are primarily associated with the Hudson River. The study area includes approximately 56 acres of mapped NWI wetlands in **New York County (Manhattan)** and 21 acres in **Bronx County**. In both New York and Bronx counties, all NWI wetlands are classified as estuarine deepwater.

Exhibit G-10—NYSDEC Tidal Wetland Classifications in the Study Area

Tidal Wetland Class	Description
Open Water (OW)-	Open water areas
Coastal Shoals, Bars and Mudflats (SM)	The tidal wetland zone that at high tide is covered by saline or fresh tidal waters, at low tide is exposed or is covered by water to a maximum depth of approximately one foot, and is not vegetated.
Vegetated Coastal Shoals, Bars and Mudflats (SV)	The tidal wetland zone that at high tide is covered by saline or fresh tidal waters, at low tide is exposed or is covered by water to a maximum depth of approximately one foot, and is vegetated.
Broad-Leaf Vegetation (BV)	The vegetated tidal wetlands zone that includes all lands that generally receive daily flushing from fresh tidal water. This area is generally lower than the graminoid vegetation area and is characterized by broad leaf emergent vegetation such as spatterdock, <i>Nuphar sp.</i> , pickerelweed (<i>Pontederia cordata</i>) and arrowleaf, (<i>Peltandra virginica</i>) among others.
Graminoid Vegetation (GV)	The vegetated tidal wetlands zone that includes all lands that receive at least periodic flushing from fresh water. This area is generally higher than the broad leaf vegetation area. The lower elevated portions of this area may receive daily flushing and the higher elevations periodic flushing from storm tides. It is characterized by graminoid vegetation such as cattail (<i>Typha angustifolia</i>), bulrushes, (<i>Scirpus spp.</i>) and wild rice, <i>Zizania aquatica</i> .
Swamp Shrub (SS)	The swamp shrub zone includes all land that receives periodic inundation from tidal fresh waters and is characterized by shrubs such as alder (<i>Alnus spp.</i>), buttonbush (<i>Cephalanthus occidentalis</i>) bog rosemary (<i>Andromeda glaucophylla</i>), dogwoods (<i>Cornus spp.</i>) and leatherleaf (<i>Chamaedaphne calyculata</i>).
Swamp Tree (ST)	The swamp tree zone includes all land that receives periodic inundation from tidal fresh waters and is characterized by trees such as red maple (<i>Acer rubrum</i>), willows (<i>Salix spp.</i>) and black ash (<i>Fraxinus nigra</i>).

Exhibit G-11—NYSDEC Freshwater Wetland Classifications¹

Freshwater Wetland Class	Description
Class I	If it has any one of following seven characteristics: (1) kettlehole bog, (2) resident habitat for endangered or threatened animal species or (3) supports other animal species unusual for the state or region or (4) contains endangered or threatened plant species, (5) provides protection to developed area from significant flood damage, or (6) tributary to surface water or aquifer used for public water supply, or (7) contains four or more Class II characteristics.
Class II	If it has any one of following seventeen characteristics: (1) emergent marsh covered in which cover type is less than two-thirds purple loosestrife and/or reed (phragmites), (2) contains two or more wetland structural groups, (3) contiguous to a tidal wetland, (4) associated with permanent open water outside the wetland, (5) adjacent or contiguous to streams classified C(t) or higher under article 15 of the environmental conservation law, (6) traditional migration habitat of an endangered or threatened animal species, (7) resident habitat of an animal species vulnerable in the state, (8) contains a plant species vulnerable in the state, (9) supports an animal species in abundance or diversity unusual for the county in which it is found, (10) has demonstrable archaeological or paleontological significance as a wetland, (11) contains, is part of, owes its existence to, or is ecologically associated with, an unusual geological feature, which is an excellent representation of its type, (12) provide protection from significant flood damage to lightly developed area, an area used for growing crops for harvest, or an area planned for development by a local planning authority, (13) hydraulically connected to an aquifer identified by a government agency as a potentially useful water supply, (14) acts in a tertiary treatment capacity for a sewage disposal system, (15) within an urbanized area, (16) one of the three largest wetlands within a city, town, or New York City borough, or (17) within a publicly owned recreation area.
Class III	If it has any one of following fifteen characteristics: (1) emergent marsh in which purple loosestrife and/or reed (phragmites) constitutes two-thirds or more of the cover type, (2) deciduous swamp, (3) shrub swamp, (4) consists of floating and/or submergent vegetation, (5) consists of wetland open water, (6) contains an island with an area or height above the wetland adequate to provide one or more of the benefits described in section 664.6(b)(6);(7) has a total alkalinity of at least 50 parts per million, (8) is adjacent to fertile upland, (9) resident habitat of an animal species vulnerable in the major region of the state in which it is found, or it is traditional migration habitat of an animal species vulnerable in the state or in the major region in which it is found, (10) contains a plant species vulnerable in the major region, (11) part of a surface water system with permanent open water and it receives significant pollution of a type amenable to amelioration by wetlands, (12) visible from an interstate highway, a parkway, a designated scenic highway, or a passenger railroad and serves a valuable aesthetic or open space function, (13) one of the three largest wetlands of the same cover type within a town, (14) in a town in which wetland acreage is less than one percent of the total acreage or (15) is on publicly owned land that is open to the public.
Class IV	If it does not have any of the characteristics listed as criteria for Class I, II or III wetlands. Class IV wetlands will include wet meadows and coniferous swamps, which lack other characteristics justifying a higher classification.

¹ NYSDEC, "Environmental Conservation Law §3-0301 and §24-1301, Chapter X-Division of Water, Part 664 Freshwater Wetlands Maps and Classification." Accessed April 18, 2011. <http://www.dec.ny.gov/regs/4612.html#13474>

In **Westchester County**, the study area includes a total 634 acres of mapped wetlands within 300 feet of the railroad centerline. This includes 150 acres mapped of NWI wetlands, 424 acres of NWI and NYSDEC tidal wetlands, and 60 acres of NYSDEC tidal wetlands. NWI wetlands include 91 percent of estuarine deepwater and 1 percent of estuarine wetland. NYSDEC tidal wetlands include approximately 68 percent open water and 4 percent gramminoid vegetation. In addition, there are 1,018 acres of adjacent areas of tidal wetlands mapped. NYSDEC freshwater wetlands include approximately 64 percent of Class I wetlands and 36 percent of Class II Wetlands.

In **Putnam County**, there are a total of 289 acres of wetlands mapped in the study area. Of the 289 acres, 211 acres are NWI and NYSDEC tidal wetlands and 46 acres are NYSDEC tidal wetlands. NWI wetlands include: 71 percent of estuarine deepwater, 19 percent of estuarine wetland, and 9 percent of palustrine forested/shrub or emergent wetlands. NYSDEC tidal wetlands include approximately 70 percent open water and 24 percent gramminoid vegetation wetlands. In addition, there are a total of 386 acres of adjacent areas to tidal wetlands mapped. NYSDEC freshwater wetlands include approximately 43 percent of Class I wetlands and 57 percent of Class II wetlands.

In **Dutchess County**, the study area passes through a total of 1,312 acres of mapped wetlands. This includes 1,017 acres of NWI and NYSDEC tidal wetlands, 185 acres of NWI and NYSDEC tidal/freshwater wetlands, and 104 acres of NYSDEC tidal wetlands. NWI wetlands include: 49 percent riverine, 2 percent estuarine wetlands, 10 percent palustrine emergent wetland or forested/shrub wetlands, 4 percent of ponds, and 6 percent of lakes. NYSDEC tidal wetlands include approximately 79 percent of open water, 8 percent of broad-leaf vegetation, and 9 percent of gramminoid vegetation. In addition, there are a total of 1,995 acres of adjacent areas to tidal wetlands mapped. NYSDEC freshwater wetlands include approximately 71 percent of Class I wetlands and 29 percent of Class II wetlands.

In **Columbia County**, the study area includes a total of 966 acres of mapped wetlands. This includes 451 acres of NWI and NYSDEC tidal wetlands, 427 acres of NWI and NYSDEC tidal/freshwater wetlands, 62 acres of NYSDEC tidal wetlands, and 27 acres of NYSDEC tidal and freshwater wetlands. NWI wetlands include: 62 percent riverine, 17 percent palustrine emergent wetland, 17 percent palustrine forested/shrub wetlands, and 5 percent pond. NYSDEC tidal wetlands include approximately 56 percent of open water, 21 percent of gramminoid vegetation, and 12 percent of broad-leaf vegetation. In addition, there are a total of 1,178 acres of adjacent areas to tidal wetlands mapped. NYSDEC freshwater wetlands include approximately 90 percent of Class I wetlands and 10 percent of Class II wetlands.

In **Rensselaer County**, the existing Empire Corridor 90/110 Study Area passes through a total of 164 acres of mapped wetlands. Of the 164 acres, 66 acres are NWI and NYSDEC tidal wetlands, 76 acres are NWI and NYSDEC tidal and freshwater wetlands, 13 acres are NYSDEC tidal wetlands, and 9 acres are NYSDEC tidal and freshwater wetlands. NWI wetlands include: 44 percent of palustrine forested/shrub wetlands, 41 percent of riverine, and 13 percent of palustrine emergent wetland. NYSDEC tidal wetlands include approximately 53 percent of open water; 24 percent of gramminoid vegetation; 7 percent broad-leaf vegetation; 7 percent coastal shoals, bars, and mudflats; and 9 percent swamp tree. In addition, there are a total of 805 acres of adjacent areas to tidal wetlands mapped. NYSDEC freshwater wetlands include approximately 95 percent of Class I wetlands and 5 percent of Class II wetlands.

In Rensselaer County, the 125 Study Area passes through a total of 161 acres of mapped wetlands. Of the 161 acres, 62 acres are NWI and NYSDEC tidal wetlands, 76 acres are NWI and NYSDEC tidal

and freshwater wetlands, 13 acres are NYSDEC tidal wetlands, and 10 acres are NYSDEC tidal and freshwater wetlands. NWI wetlands include: 44 percent of palustrine forested/shrub wetlands, 40 percent of riverine, 13 percent of palustrine emergent wetland, and 2 percent of ponds. NYSDEC tidal wetlands include approximately 51 percent of open water; 24 percent of graminoid vegetation; 7 percent broad-leaf vegetation; 8 percent coastal shoals, bars, and mudflats; and 10 percent swamp tree. In addition, there are a total of 770 acres of adjacent areas to tidal wetlands mapped. NYSDEC freshwater wetlands include approximately 96 percent of Class I wetlands and 4 percent of Class II wetlands.

9.1.2 Empire Corridor West/Niagara Branch: 90/110 Study Area

In **Albany County**, the study area passes through a total of 136 acres of mapped wetlands. The mapped wetlands include 75 acres of NWI wetlands, 28 acres of NWI and NYSDEC freshwater wetlands, 26 acres of NYSDEC freshwater wetlands, and 6 acres are NWI and NYSDEC tidal wetlands. NWI wetlands include: 64 percent of palustrine forested/shrub wetlands, 10 percent of palustrine emergent wetland, 9 percent pond, and 15 percent riverine. NYSDEC tidal wetlands include approximately 100 percent open water. In addition, there are a total of 166 acres of adjacent areas to tidal wetlands mapped. NYSDEC freshwater wetlands include only Class I wetlands.

West of Albany County, there are no NYSDEC tidal wetlands mapped. In **Schenectady County**, the study area includes a total of 103 acres of mapped wetlands. Of the 85 acres, 39 acres are NWI wetlands, 24 acres are NYSDEC freshwater wetlands, and 22 acres are NWI and NYSDEC freshwater wetlands. NWI wetlands include: 61 percent riverine, 25 percent of palustrine forested/shrub wetlands, 87 percent of palustrine emergent wetland, and 7 percent of ponds. NYSDEC freshwater wetlands include approximately 52 percent of Class I wetlands and 48 percent of Class II wetlands.

In **Montgomery County**, the study area crosses a total of 630 acres of mapped wetlands in the study area. The study area includes 181 acres of NYSDEC freshwater wetlands, 336 acres of NWI wetlands, and 113 acres of NWI and NYSDEC freshwater wetlands. The mapped NWI wetlands include: 11 percent palustrine emergent wetland, 4 percent of palustrine forested/shrub wetlands, 4 percent palustrine pond, and 82 percent of riverine. NYSDEC freshwater wetlands include approximately 29 percent of Class I wetlands, 66 percent of Class II wetlands, and 5 percent of Class IV wetlands.

In **Herkimer County**, the study area includes a total of 354 acres of mapped wetlands. The mapped wetlands include 26 acres of NYSDEC freshwater wetlands, 40 acres of NWI and NYSDEC freshwater wetlands and 288 acres of NWI wetlands. The mapped NWI wetlands include: 37 percent of palustrine forested/shrub wetlands, 16 percent of palustrine emergent wetlands, 5 percent palustrine pond, and 42 percent of riverine. NYSDEC freshwater wetlands are comprised entirely of Class II wetlands.

The study area crosses a total of 830 acres of mapped NYSDEC freshwater wetlands in **Oneida County** and 282 acres in **Madison County**. In Oneida County, NYSDEC freshwater wetlands include approximately 92 percent of Class II wetlands and 8 percent of Class IV wetlands. In Madison County, NYSDEC freshwater wetlands include 22 percent Class I wetlands and 78 percent Class II wetlands.

In **Onondaga County**, the study area crosses a total of 568 acres of mapped wetlands. This includes 152 acres of NWI wetlands, 212 acres of NWI and NYSDEC freshwater wetlands, and 204 acres of NYSDEC freshwater wetlands. NWI wetlands include: 70 percent of palustrine forested/shrub

wetlands, 18 percent of palustrine emergent wetland, 4 percent of riverine, 5 percent of lakes, and 2% of pond. NYSDEC freshwater wetlands include approximately 43 percent of Class I wetlands, 49 percent of Class II wetlands, and 8 percent of Class III wetlands.

In **Cayuga County**, the study area crosses a total of 200 acres of mapped wetlands. Of the 200 acres, 68 acres are NWI wetlands, 96 acres are NWI and NYSDEC freshwater wetlands, and 36 acres are NYSDEC freshwater wetlands. NWI wetlands include: 68 percent of palustrine forested/shrub wetlands, 21 percent of palustrine emergent wetlands, 2 percent freshwater pond, and 7 percent of riverine. NYSDEC freshwater wetlands include approximately 76 percent of Class II wetlands and 24 percent of Class III wetlands.

In **Wayne County**, the study area crosses a total of 919 acres of mapped wetlands. This includes 343 acres of NWI wetlands, 430 acres of NWI and NYSDEC freshwater wetlands, and 146 acres of NYSDEC freshwater wetlands. NWI wetlands include: 62 percent of palustrine forested/shrub wetlands, 23 percent of palustrine emergent wetlands, 11 percent of riverine, and 4 percent of ponds. NYSDEC freshwater wetlands include approximately 27 percent of Class I wetlands, 70 percent of Class II wetlands, 1 percent of Class III wetlands, and 2 percent of Class IV wetlands.

In **Monroe County**, the study area crosses a total of 306 acres of mapped wetlands. These include 138 acres of NWI wetlands, 125 acres of NWI and NYSDEC freshwater wetlands, and 43 acres of NYSDEC freshwater wetlands. NWI wetlands include: 70 percent of palustrine forested/shrub wetlands, 9 percent of palustrine emergent wetland, 6 percent of ponds, 7 percent riverine, and 7 percent of lakes. NYSDEC freshwater wetlands include approximately 35 percent of Class I wetlands and 65 percent of Class II wetlands.

In **Genesee County**, the study area crosses a total of 421 acres of mapped wetlands. This includes 250 acres of NWI wetlands, 119 acres of NWI and NYSDEC freshwater wetlands, and 52 acres of NYSDEC freshwater wetlands. NWI wetlands include: 61 percent of palustrine forested/shrub wetlands, 20 percent of palustrine emergent wetland, 9 percent of ponds, 5 percent riverine, and 5 percent of lakes. NYSDEC freshwater wetlands include approximately 12 percent of Class I wetlands, 74 percent of Class II wetlands, and 14 percent of Class III wetlands.

In **Erie County**, the study area crosses a total of 212 acres of mapped wetlands. This includes 176 acres of NWI wetlands, 26 acres of NWI and NYSDEC freshwater wetlands, and 10 acres of NYSDEC freshwater wetlands. NWI wetlands include: 74 percent of palustrine forested/shrub wetlands, 4 percent of ponds, and 20 percent of riverine. NYSDEC freshwater wetlands include only Class II wetlands.

In **Niagara County**, the study area crosses a total of 66 acres of mapped NWI wetlands. NWI wetlands include: 64 percent of palustrine forested/shrub wetlands, 18 percent of palustrine emergent wetland, 7 percent of ponds, and 11 percent of riverine.

9.1.3 Empire Corridor West/Niagara Branch: 125 Study Area

In **Albany County**, the study area passes through a total of 12 acres of mapped wetlands. The mapped wetlands include four acres of NWI wetlands and seven acres of NWI and NYSDEC tidal wetlands, and one acre of NYSDEC tidal wetlands. There are no NWI and NYSDEC freshwater wetlands or NYSDEC freshwater wetlands mapped in the study area in Albany County. NWI wetlands include: 69 percent riverine, 15 percent of palustrine forested/shrub wetlands, 8 percent freshwater

pond, and 8 percent of palustrine emergent wetland. NYSDEC tidal wetlands include 100 percent open water. In addition, there are a total of 75 acres of adjacent areas to tidal wetlands mapped.

West of Albany County, there are no NYSDEC tidal wetlands mapped. In **Schenectady County**, the study area includes a total of 60 acres of mapped wetlands. All of the 60 acres are NWI wetlands. NWI wetlands include: 18 percent of palustrine forested/shrub wetlands, 13 percent of palustrine emergent wetland, 13 percent freshwater pond, and 55 percent riverine. .

In the study area in **Schoharie County**, the study area includes a total of 51 acres of mapped wetlands. All the 51 acres are NWI wetlands. NWI wetlands include: 4 percent of palustrine forested/shrub wetlands, 14 percent of palustrine emergent wetland, 4 percent freshwater pond, and 78 percent riverine.

In **Montgomery County**, the study area crosses a total of 144 acres of mapped wetlands. The study area includes 62 acres of NWI wetlands and 118 acres of NYSDEC freshwater wetlands. The mapped NWI wetlands include: 55 percent of palustrine emergent wetland, 14 percent of palustrine forested/shrub wetlands, 18 percent of freshwater ponds, and 12 percent riverine. NYSDEC freshwater wetlands include approximately 98 percent of Class I wetlands and 2 percent of Class II wetlands.

In **Herkimer County**, the study area includes a total of 81 acres of mapped wetlands. The mapped wetlands include five acres of NYSDEC freshwater wetlands, four acres of NWI and NYSDEC freshwater wetlands, and 72 acres of NWI wetlands. The mapped NWI wetlands include: 43 percent of palustrine forested/shrub wetlands, 39 percent of riverine, 12 percent of palustrine emergent wetlands, and 5 percent of freshwater ponds. NYSDEC freshwater wetlands are comprised entirely of Class II wetlands.

The study area crosses a total of 252 (62 acres of NWI mapped wetlands, 118 acres of NWI and NYSDEC freshwater wetlands, and 72 acres NYSDEC wetlands) acres of mapped wetlands in Oneida County and 91 (80 acres of NWI mapped wetlands, and 11 acres of NWI and NYSDEC freshwater wetlands) acres in Madison County. In Oneida County, the mapped NWI wetlands include: 84 percent of palustrine forested/shrub wetlands, 4 percent of riverine, 6 percent of palustrine emergent wetlands, and 5 percent of freshwater ponds. While in Madison, the NWI wetlands include: 75 percent of palustrine forested/shrub wetlands, 13 percent of riverine, 8 percent of palustrine emergent wetlands, and 11 percent of freshwater ponds. In Oneida County, NYSDEC freshwater wetlands include approximately 79 percent of Class II wetlands, 17 percent of Class III wetlands, and 4 percent of Class IV wetlands. In Madison County, NYSDEC freshwater wetlands include 99 percent Class II wetlands and 1 percent Class III wetlands.

In **Onondaga County**, the study area crosses a total of 484 acres of mapped wetlands. This includes 102 acres of NWI wetlands, 163 acres of NWI and NYSDEC freshwater wetlands, and 219 acres of NYSDEC freshwater wetlands. NWI wetlands include: 74 percent of palustrine forested/shrub wetlands, 3 percent of ponds, 12 percent of palustrine emergent wetland, and 12 percent of lakes/riverine. NYSDEC freshwater wetlands include approximately 47 percent of Class I wetlands, 42 percent of Class II wetlands, and 11 percent of Class III wetlands.

In **Cayuga County**, the study area crosses a total of 158 acres of mapped wetlands. Of the 157 acres, 45 acres are NWI wetlands, 86 acres are NWI and NYSDEC freshwater wetlands, and 27 acres are NYSDEC freshwater wetlands. NWI wetlands include: 91 percent of palustrine forested/shrub wetlands, 5 percent of palustrine emergent wetlands, and 4 percent of riverine. NYSDEC freshwater

wetlands include approximately 87 percent of Class II wetlands and 13 percent of Class III wetlands.

In **Wayne County**, the study area crosses a total of 352 acres of mapped wetlands. This includes 123 acres of NWI wetlands, 191 acres of NWI and NYSDEC freshwater wetlands, and 38 acres of NYSDEC freshwater wetlands. NWI wetlands include: 84 percent of palustrine forested/shrub wetlands, 7 percent of palustrine emergent wetlands, 5 percent of riverine, and 4 percent of lakes/ponds. NYSDEC freshwater wetlands include approximately 30 percent of Class II wetlands and 70 percent of Class III wetlands.

In **Monroe County**, the study area crosses a total of 265 acres of mapped wetlands. These include 138 acres of NWI wetlands, 106 acres of NWI and NYSDEC freshwater wetlands, and 21 acres of NYSDEC freshwater wetlands. NWI wetlands include: 83 percent of palustrine forested/shrub wetlands, 5 percent of palustrine emergent wetland, and 13 percent of ponds, riverine, and lakes. NYSDEC freshwater wetlands include approximately 10 percent of Class I wetlands, 72 percent of Class II wetlands, and 18 percent of Class III wetlands.

In **Genesee County**, the study area crosses a total of 427 acres of mapped wetlands. This includes 234 acres of NWI wetlands, 182 acres of NWI and NYSDEC freshwater wetlands, and 11 acres of NYSDEC freshwater wetlands. NWI wetlands include: 86 percent of palustrine forested/shrub wetlands, 7 percent of palustrine emergent wetland, and 7 percent riverine/ponds. NYSDEC freshwater wetlands include approximately 50 percent of Class I wetlands, 18 percent of Class II wetlands, and 32 percent of Class III wetlands.

In **Erie County**, the study area crosses a total of 280 acres of mapped wetlands. This includes 184 acres of NWI wetlands, 83 acres of NWI and NYSDEC freshwater wetlands, and 13 acres of NYSDEC freshwater wetlands. NWI wetlands include: 70 percent of palustrine forested/shrub wetlands, 8 percent of palustrine emergent wetland, and 22 percent of ponds/riverine/lakes. NYSDEC freshwater wetlands include approximately 65 percent of Class I wetlands and 35 percent of Class II wetlands.

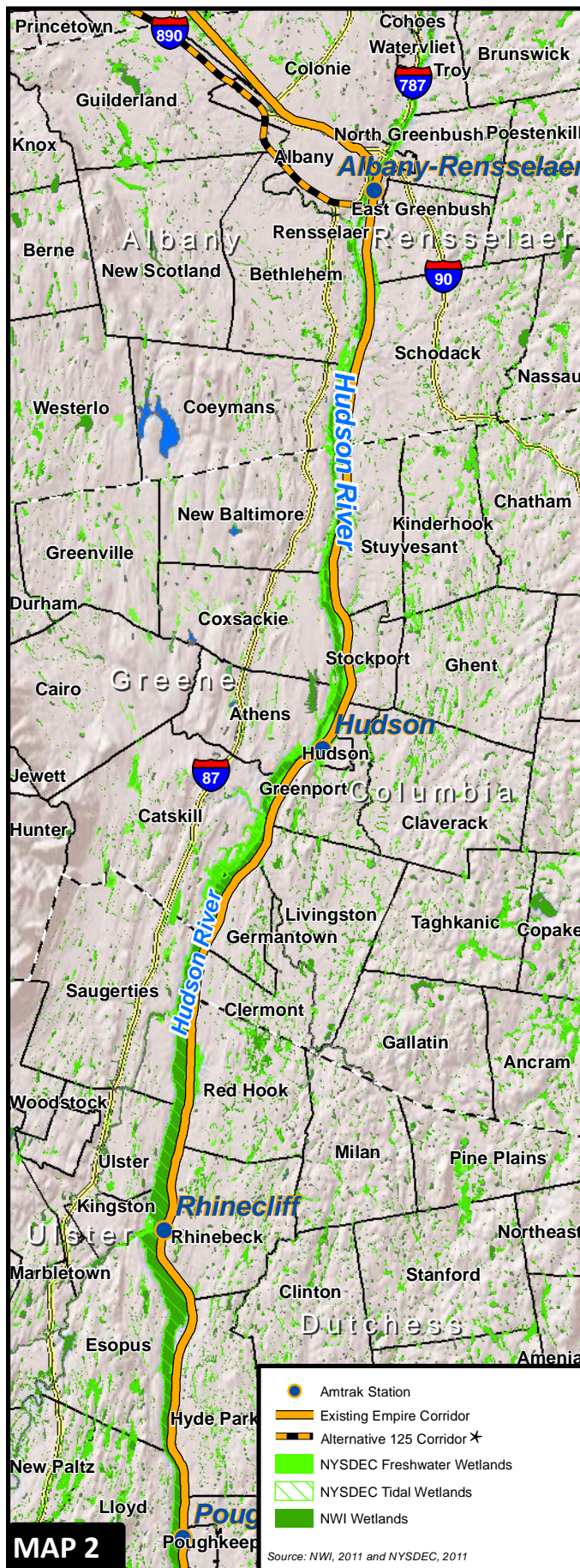
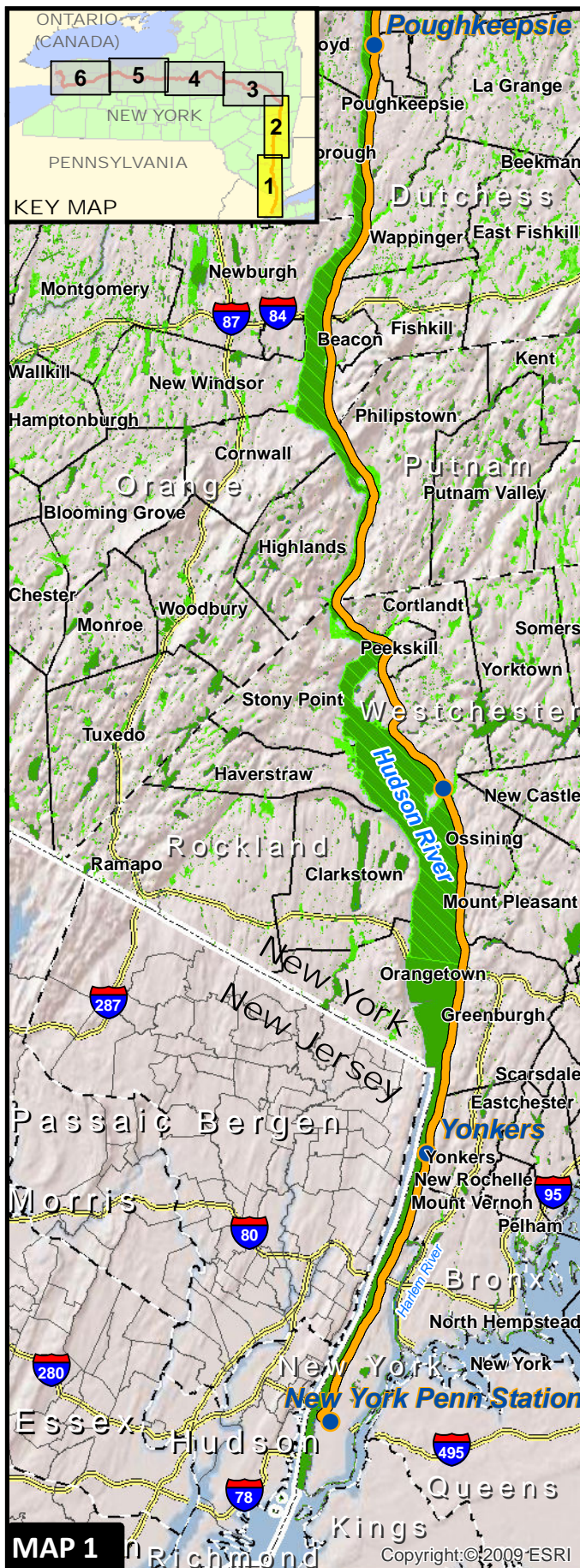
In **Niagara County**, the study area crosses a total of 66 acres of mapped NWI wetlands. NWI wetlands include: 63 percent of palustrine forested/shrub wetlands, 18 percent of palustrine emergent wetland, 7 percent of ponds, and 10 percent of riverine.

9.2 Environmental Consequences

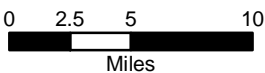
Chapter 4 of the Tier 1 Final EIS addresses and compares the impacts of the Preferred Alternative, Alternative 90B, to those of the other alternatives considered (refer to Section 4.10). The potential effects impacts of the Base Alternative and other Build Alternatives are described in more detail below.

9.2.1 Base Alternative

The Base Alternative represents the baseline condition against which the alternatives are measured and incorporates improvements that have already been programmed and have been constructed. The Base Alternative will maintain weekday service frequencies. The Tier 1 Draft EIS addressed the potential impacts on wetlands of the eight projects included in the Base Alternative.



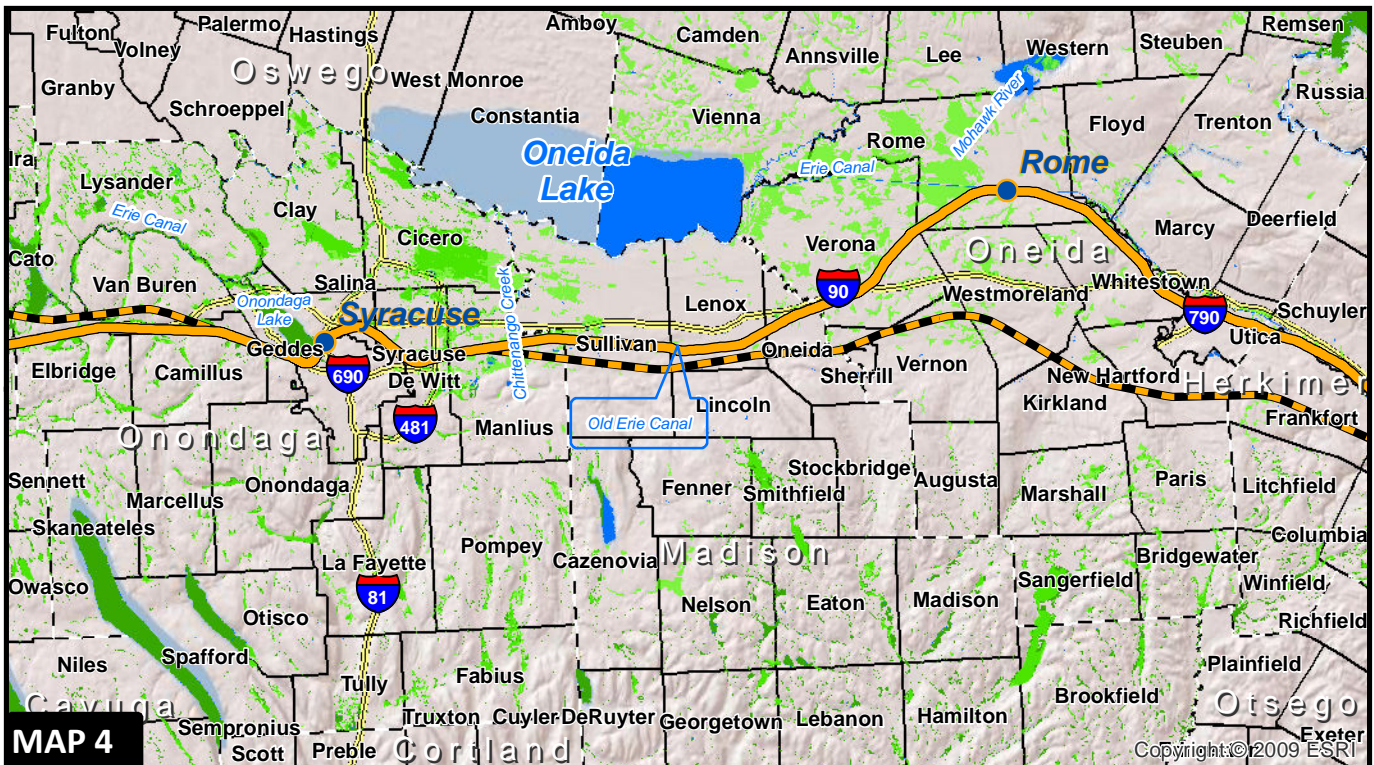
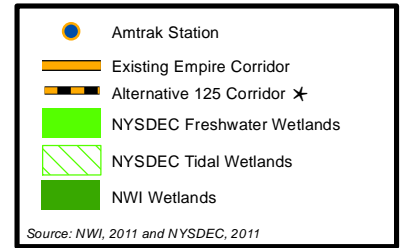
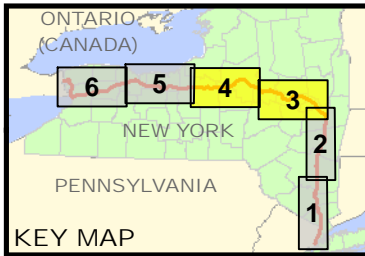
*Alt. 125 as shown is a potential corridor used to analyze the potential operating characteristics, environmental impacts and cost for this speed (125 mph) threshold.



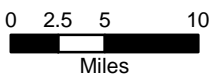
Wetlands
Exhibit G-11

Tier 1 EIS
High Speed Rail
Empire Corridor Program





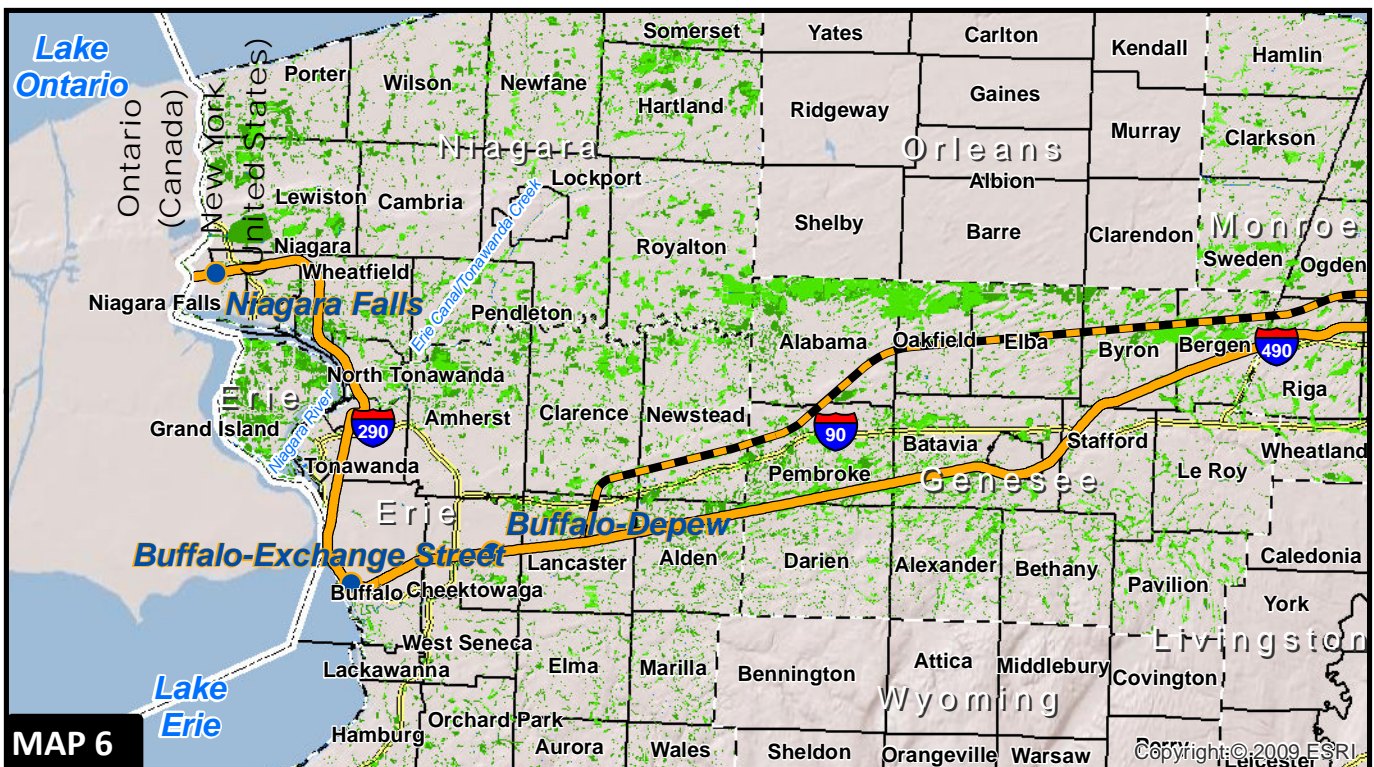
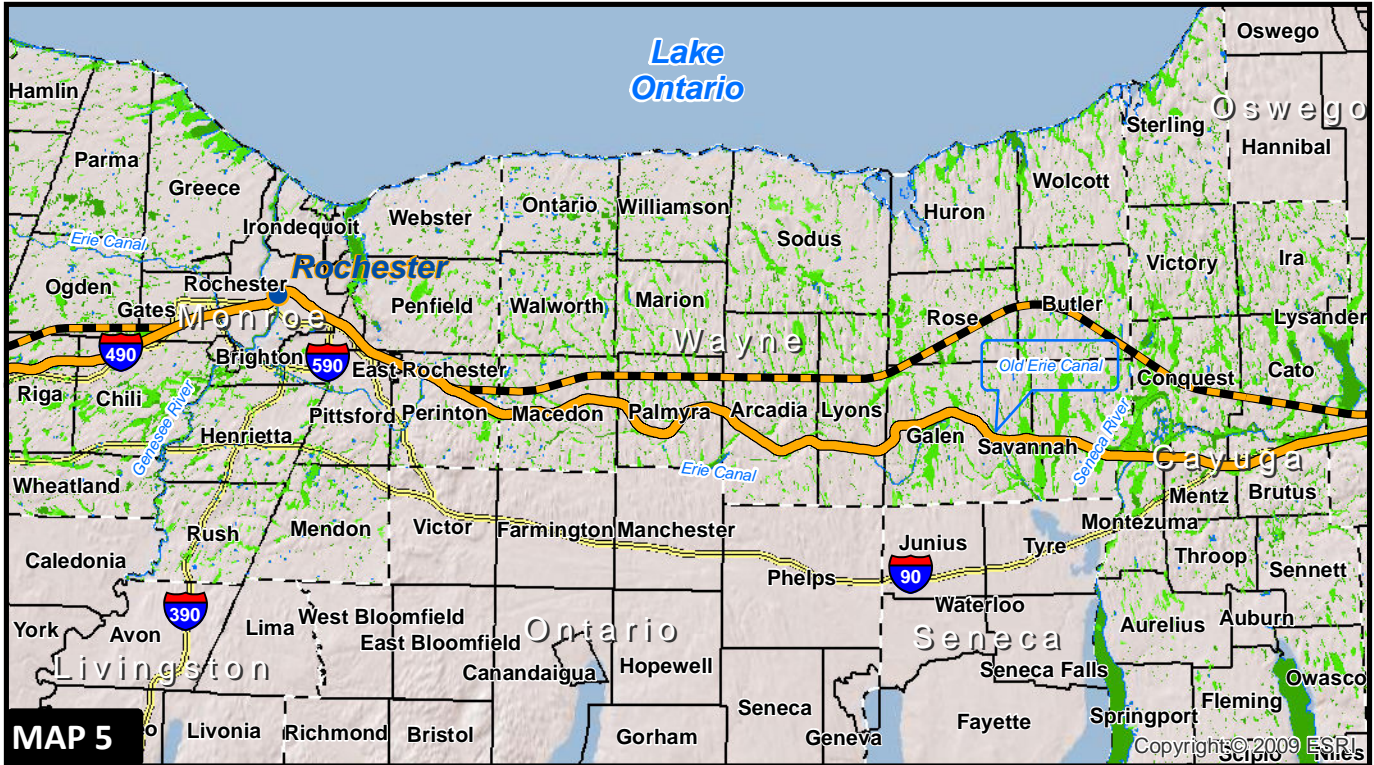
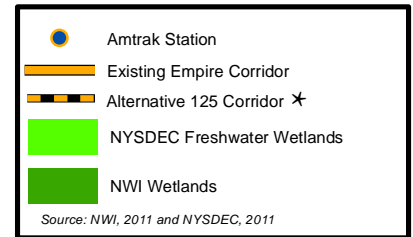
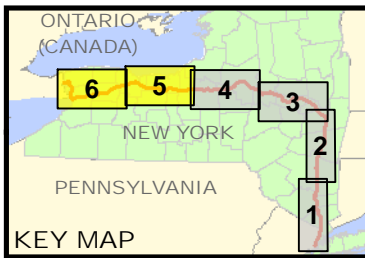
*Alt. 125 as shown is a potential corridor used to analyze the potential operating characteristics, environmental impacts and cost for this speed (125 mph) threshold.



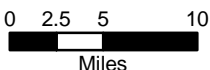
Wetlands
Exhibit G-11

Tier 1 EIS
High Speed Rail
Empire Corridor Program





★ Alt. 125 as shown is a potential corridor used to analyze the potential operating characteristics, environmental impacts and cost for this speed (125 mph) threshold.



Wetlands
Exhibit G-11

Tier 1 EIS
High Speed Rail
Empire Corridor Program



9.2.2 Alternative 90A

Although some of this work would be conducted within the existing right-of-way, ground disturbance in proposed work areas that overlap mapped wetlands, either inside or outside the existing right-of-way, could cause wetland impacts through dredging, filling or other disturbance.

Empire Corridor South

Depending on design of rock slope stabilization, there is potential for impact to wetlands and waters associated with the Hudson River and its tributaries through dredging, filling or other construction impacts. Alternative 90A would include construction of four miles of second track through urbanized areas of Manhattan (SRP-1, MPs 9 to 13) and 1.4 miles of new track extending under the Tappan Zee Bridge (SRP-2, 23.8-25.2). The Hudson River is adjacent to the rail line throughout these proposed improvement areas. One mapped NWI and NYSDEC wetlands associated with the Hudson River and the Harlem River confluence is located in the proposed work area. Additional track construction over the Harlem River (MP 10) could have the potential to temporarily or permanently impact mapped wetlands at this location. Improvements under the Tappan Zee Bridge would be within the current right-of-way and impacts to wetlands would be unlikely.

With Alternative 90A, signal improvements proposed along 43 miles (MPs 32.8 and 75.8) would cross mapped NWI and NYSDEC wetlands approximately 30 times. Crossings are generally small areas of overlap connected to larger adjacent mapped areas associated with the Hudson River and its tributaries to the east. Proposed work would primarily involve signal upgrades within the existing rail bed; therefore, it is unlikely that impacts would occur to wetlands for these improvements.

New third track in Dutchess County (SRP-3, MPs 53 to 63) would cross wetlands associated with Breakneck Brook (MP 54) and, depending on construction design, a cove at the confluence of Fishkill Creek and the Hudson River (MPs 57.5 to 57.75). In addition, improvements at the Poughkeepsie Yard/Storage Facility (MPs 71 to 75.8) would cross Sunfish Cove and its associated wetlands. Ground disturbance in the above-mentioned work areas that overlap wetlands could cause impacts through dredging, filling or other disturbance.

North of Poughkeepsie and south of Albany-Rensselaer Station, the alignment would cross mapped wetland areas approximately 7 times. NYSDOT anticipates that the new control points and station improvements would occur largely within the right-of-way or current station footprint, and would not likely involve impacts to wetlands.

Alternative 90A would include the replacement of the Livingston Avenue Bridge over the Hudson River (ES-15, MP 143).

Empire Corridor West/Niagara Branch

Track improvements along the Empire Corridor West/Niagara Branch would include 10 miles of third track between MPs 169 and 179 (EW-14a) and Amsterdam Station improvements along the west end of this segment (EIS-1, MP 177.6). Wetlands generally associated with the Mohawk River are mapped as abutting the right-of-way on its southern edge for a majority of the proposed work areas along this 10-mile segment and cross the alignment three times around MP 178. Although this work would be conducted within the existing right-of-way, ground disturbance and construction in proposed work areas that overlap wetland areas could cause wetland impacts through dredging or filling activities. Updates to three control points (EW-05, MPs 175, 239 and 248) would not cross any wetlands and would not likely involve impacts to wetlands.

Alternative 90A would include Syracuse Station track improvements (EIS-6, MPs 290 to 294), and third track improvements along 11 miles (EW-16, MPs 373 to 382) west of the Rochester Station. Work for the Syracuse Station would be adjacent to mapped wetlands associated with Ley Creek and Onondaga Lake and would also include crossings of eight mapped wetlands: one associated with the Erie Canal and one associated with Onondaga Lake. West of the Rochester Station, proposed improvements would cross two mapped NWI and NYSDEC wetlands associated with the Erie Canal (MP 374.5), and a tributary of Black Creek (MP 379.5). Therefore, reconstruction of the Syracuse Station and third track improvements west of Rochester would have the potential to impact wetlands through dredging, filling, or construction activities at these crossings.

The addition of a third track is proposed along 11 miles located largely west of the designated urban area around Rochester (EW-20, MPs 382 to 393). Mapped wetland areas, primarily associated with Black Creek and its tributaries, would be crossed approximately 11 times at these proposed work locations. Although this work would be conducted within the existing right-of-way, ground disturbance and construction in proposed work areas that overlap wetland areas could cause wetland impacts through dredging or filling activities.

Two small mapped wetland areas would be crossed at the proposed work area of station improvements of the Buffalo-Depew Station (EIS-10, MPs 429 to 433). In addition, along the proposed double tracking work area (EW-17, MPs QDN17 to QDN23.2 along the Niagara Branch, work would cross three mapped wetland areas associated with Bergholtz and Cayuga Creeks. Work conducted within these mapped wetland areas described above would have the potential to impact the wetland through dredging, filling or construction activities. Niagara Falls Maintenance Facility and track improvements (EW-18 and EIS-12, MPs 25 to 28) would not cross any mapped wetlands areas and would not likely involve impacts to wetlands.

9.2.3 Alternative 110

With Alternative 110, there is the potential for 911 new and existing crossings along Empire Corridor. Road realignment, access road construction, and culvert improvements are also proposed under Alternative 110 within and outside of the right-of-way,

Empire Corridor South

No additional work within Empire Corridor South, other than for Alternative 90A, is proposed, and there would be no potential for additional impacts to wetlands in this area for Alternative 110.

Empire Corridor West/Niagara Branch

NWI and NYSDEC have mapped several wetland features within the proposed work areas of third and fourth track installation associated with Alternative 110, both within and outside of the current right-of-way.

Since the third track would be situated farther from the existing tracks than Alternative 90B to accommodate 110 mph MAS, there would be slightly more wetland crossings than identified in Alternative 90B. Alternative 110 would cross the same number of mapped wetlands in Montgomery, Herkimer, Onondaga and Erie Counties as the 90B, and there would be no additional impacts (as identified at the Tier 1 level) to wetlands in these counties for Alternative 110.

In Schenectady County, Alternative 110 would cross two mapped wetland areas. Proposed new track of Alternative 110 would cross mapped wetlands approximately 26 times in Oneida County, three times in Madison County, nine times in Cayuga County, 21 times in Wayne County, 17 times in Monroe County and 18 times in Genesee County.

9.2.4 Alternative 125

With Alternative 125, there is the potential for 760 new and existing crossings along Empire Corridor. Areas that are mapped as wetlands within the proposed Alternative 125 corridor could be impacted directly by new crossings for construction of rail infrastructure. Wetlands outside of the proposed Alternative 125 corridor could be indirectly impacted by modifications of local hydrology through installation of new tracks. Impacts would be more likely to occur than with the Base, 90A, 90B (the Preferred Alternative), and 110 Alternatives.

Empire Corridor South

No new improvements, beyond what is proposed for Alternative 90A, would be proposed for Alternative 125 along the majority of Empire Corridor South. However, roughly one mile of the proposed 125 mph track would extend south from Albany-Rensselaer Station to cross the Hudson River. This work would have the potential to impact areas of wetlands associated with this portion of the Hudson River. Wetlands could be impacted at this location as a result of activities such as ground disturbance, dredging or filling of the wetlands.

Empire Corridor West/Niagara Branch

Alternative 125 also would include new right-of-way in most areas, but would merge back with the Empire Corridor over two 15- and 16-mile segments centered around Syracuse and Rochester, respectively.

Installation of the new tracks proposed for Alternative 125 would have the potential to impact a number of wetlands mapped by both NWI and NYSDEC, and more wetlands overall than Alternatives 90A, 90B, or 110 alone. All of the wetlands mapped within the proposed alignment could be impacted by Alternative 125. There would be approximately 760 locations where new track would cross mapped wetland areas. These areas are further described below.

In Schenectady County, Alternative 125 would cross three larger mapped wetlands that have

developed along the New York State Thruway between MPs QH158.5 and QH160.5. With the exception of small wetlands around MP QH163.8, MPs QH171 to QH172 and MP QH173.5, no other mapped wetlands would be crossed by the 125 Study Area in the county. In Schoharie County, Alternative 125 would cross 12 mapped wetlands, which are associated with the northern banks of Schoharie Creek (MPs QH174 to QH176) as well as several tributaries of Schoharie Creek, and it is likely that there would be wetlands in these areas.

In Montgomery County, there would be one crossing of a larger wetland mapped between MPs QH181 and QH183.5 associated with Fly Creek, and smaller crossings of wetlands associated with tributaries of the Mohawk River between MPs QH194.5-QH196 and at the county line (MP QH202). In Herkimer County, there would be several small crossings of small wetlands at roughly MPs QH203.5, QH212.75, QH213.25, and QH225.

Alternative 125 would have approximately nine crossings of larger interconnected wetlands associated with Deans Creek, Beaver Meadow Creek and other tributaries between MPs QH240 and QH247 in Oneida County. After crossing Oneida Creek at the eastern Madison County border, the Alternative 125 would cross two small wetland areas (MPs QH249.5 and QH249.75).

In Onondaga County, the 125 Study Area crosses approximately 59 mapped wetland areas. In the eastern portion of the county, there is a large wetland system between the Old Erie Canal and Chittenango Creek (MPs QH264.75 to QH271) that Alternative 125 would cross numerous times. Around Onondaga Lake, Alternative 125 would cross wetlands associated with the Old Barge Canal and the lake (MP QH278.5), before heading further west and crossing numerous small wetlands associated with Nine Mile Creek, Dead Man Creek, Cross Lake, Seneca River and other tributaries (MPs QH283.75 to QH295).

Alternative 125 would cross approximately 32 individual wetlands associated with roughly 11 wetland systems in Cayuga County. Most of these systems are associated with tributaries of the Seneca River, including Muskrat Creek and the Howland Island Wildlife Management Area on the west end of the county.

In Wayne County, wetlands are more pervasive, where there would be approximately 146 crossings of mapped wetland areas under Alternative 125. The majority of these crossings would be over small wetlands associated with tributaries of the Erie Canal, Black Creek, Clyde River, Ganargua Creek and Red Creek. In Monroe County, Alternative 125 would cross approximately 60 mapped wetlands. In the eastern portion of the county, the alignment would cross several small wetlands associated with Thomas Creek and its tributaries (MPs QH342 to QH346.5). It would then cross wetlands associated with Irondequoit Creek (MP QH347.5), the Genesee River (MP QH356), the Erie Canal (MP QH359) and a large system of wetlands associated with Little Black Creek and its tributaries (MPs QH360 to QH367.5).

Alternative 125 would cross approximately 89 mapped wetlands in Genesee County. In the eastern portion of the county, the alignment would cross several areas of wetlands associated with Black Creek and Bergen Swamp (MPs QH373 to QH378). Bergen Swamp in Genesee County is one of the largest mapped wetlands that fall within the proposed Alternative 125 alignment. The alignment would then cross isolated wetlands areas associated with Oak Orchard Creek, Murder Creek, Tonawanda Creek and tributaries through the rest of the county.

There would be approximately 40 wetland crossings in Erie County. There is a larger wetland system associated with Ransom Creek (MPs QH406.5 to QH409); however, most of the crossings in Erie

County are small and do not appear to be associated with major waterways.

10. Coastal Resources

10.1 Existing Conditions

Chapter 4 addresses protected coastal resources, such as the coastal zone and inland designated waterways. Exhibit G-13, Exhibit G-14, and Exhibit G-15 show the study area coastal resources and Local Waterfront Revitalization Programs designated under the state coastal program.

The protections for coastal areas in New York State include federal protections for coastal barriers. The Coastal Barrier Resources Act² established the John H. Chafee Coastal Barrier Resources System to promote more appropriate use and conservation of coastal barriers along the Atlantic, Gulf, and Great Lakes coastlines.

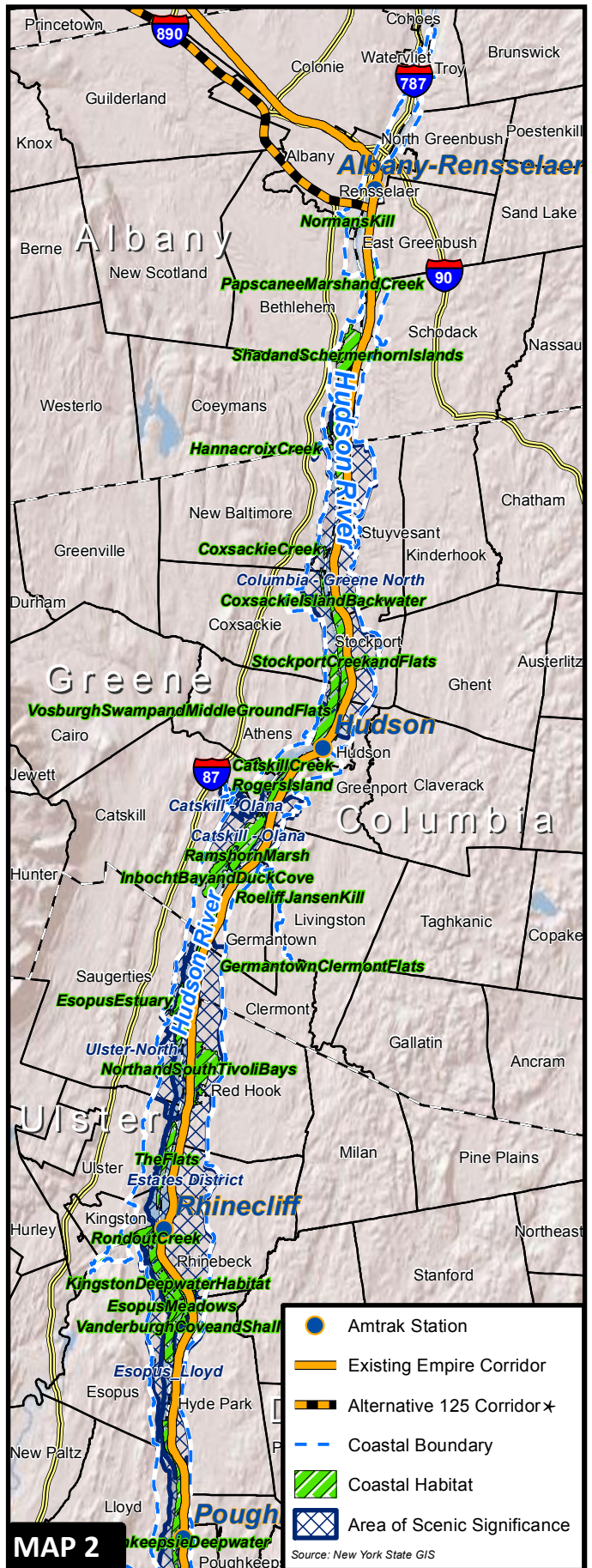
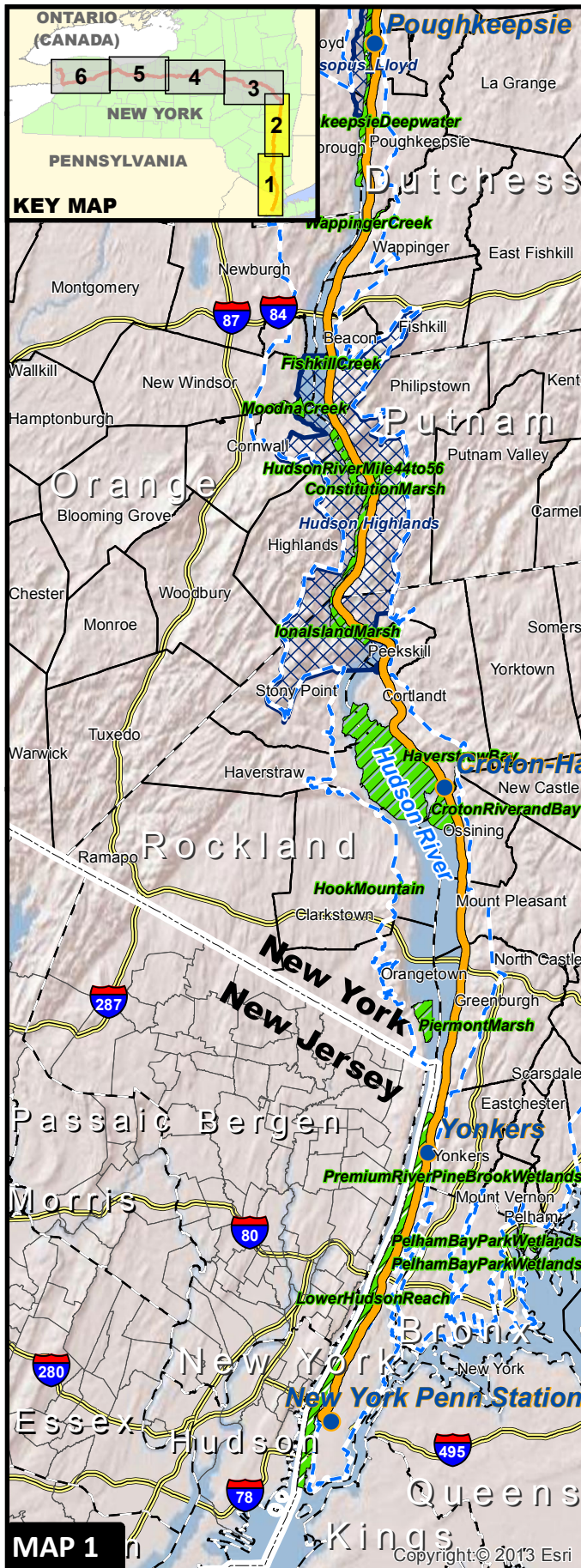
The state legislature has also designated for protection Coastal Erosion Hazard Areas that include areas along the shorelines of Lake Erie and Lake Ontario, the Atlantic Ocean and Long Island Sound³. The New York State Department of Environmental Conservation (NYSDEC) created the Coastal Erosion Control Permit Program to make sure that construction and other activities on specified coastal hazard areas meet the standards for permit issuance.

Under the Local Waterfront Revitalization Program (LWRP), communities along the designated coastal waterbodies and these inland designated waterways can enact Local Waterfront Revitalization Plans. Along the Empire Corridor South, there are 19 communities within a half mile of the corridor centerline on the east side of the Hudson River that are covered by LWRPs.

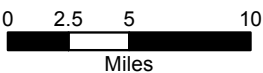
There are three communities on the west side of the Hudson River that fall within a half mile of the Empire Corridor South corridor centerline that have enacted LWRPs. There are eight communities within a half mile of the 90/110 and the 125 Study Areas between Albany Empire Corridor West/Niagara Branch corridor centerline that have enacted LWRPs. In addition to the eight individual communities with LWRP's in the Empire Corridor West/Niagara Branch section, there are two regional LWRP's that involve multiple communities within the watershed. This includes the *Mohawk River Waterfront Revitalization Plan for Schenectady County* and the *Mid-Montgomery County LWRP*, which includes several other municipalities along the Mohawk River. Exhibit G-14 lists by county those communities that have enacted Local Waterfront Revitalization Plans. With the exception of Amsterdam and North Greenbush, all the communities listed as having LWRPs are within a half mile of the corridor centerline for both the 90/110 and the 125 Study Areas. The City of Amsterdam and the Town of North Greenbush are within a half mile of the 90/110 Study Area only; not the 125 Study Area.

² U.S. Coastal Barrier Resources Act of 1982, Public Law 106-67 (16 U.S.C. 3501-3510), 1982.

³ Coastal Erosion Hazard Areas, Article 34, ECL, and Coastal Erosion Management Regulations, 6 NYCRR Part 505.



*Alt. 125 as shown is a potential corridor used to analyze the potential operating characteristics, environmental impacts and cost for this speed (125 mph) threshold.

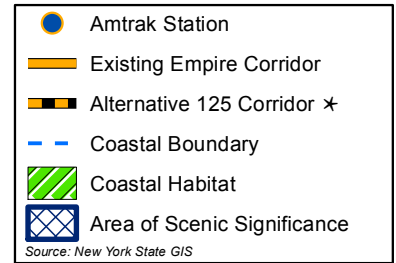
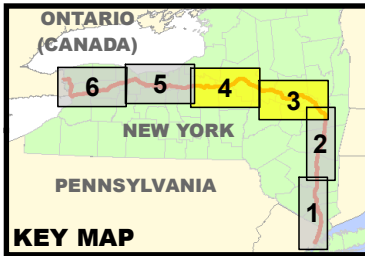


Coastal Resources Map

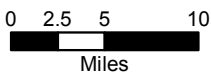
Exhibit G-12

Tier 1 EIS
High Speed Rail
Empire Corridor Program





*Alt. 125 as shown is a potential corridor used to analyze the potential operating characteristics, environmental impacts and cost for this speed (125 mph) threshold.

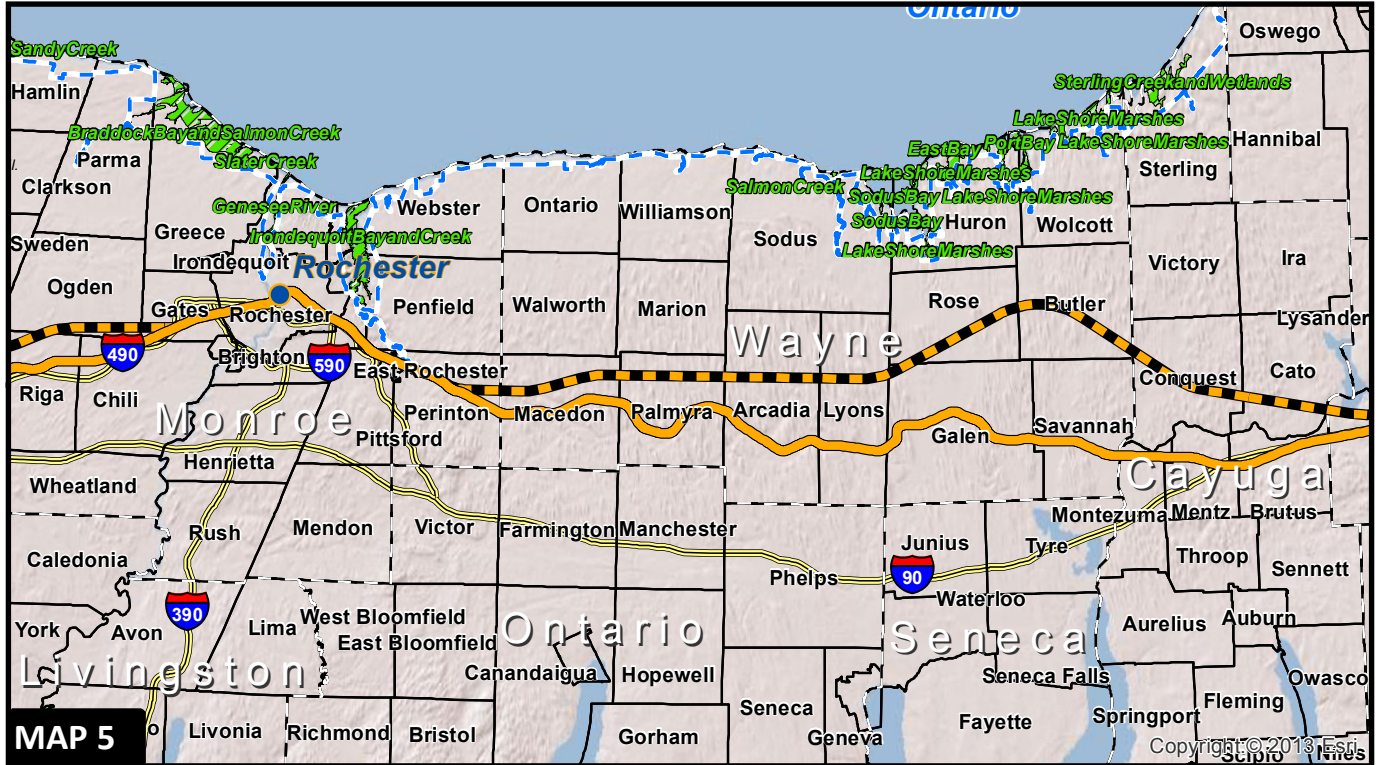
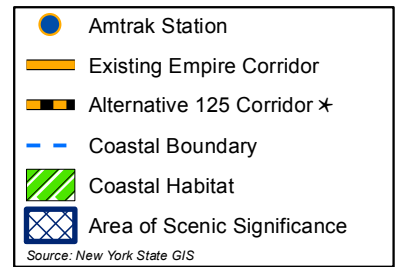
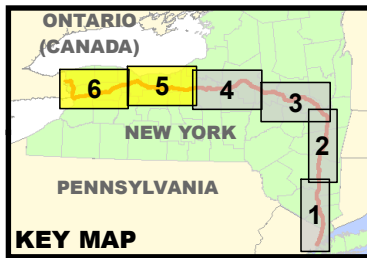


Coastal Resources Map

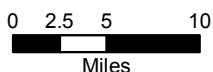
Exhibit G-12

Tier 1 EIS
High Speed Rail
Empire Corridor Program





*Alt. 125 as shown is a potential corridor used to analyze the potential operating characteristics, environmental impacts and cost for this speed (125 mph) threshold.



Coastal Resources Map

Exhibit G-12

Tier 1 EIS
High Speed Rail
Empire Corridor Program



Exhibit G-14—Local Waterfront Revitalization Programs in the Study Area (for 90/110 and 125 Study Areas unless otherwise noted)

Coastal Management Program Regions	County	LWRP Municipalities	Distance from rail centerline (within 1/2 mile)	Comments
New York City	New York	New York City (C)		
Hudson River	Westchester	Dobbs Ferry (V)		
	Westchester	Sleepy Hollow (V)		
	Westchester	Ossining (V)		
	Westchester	Croton-on-Hudson (V)		
	Westchester	Peekskill (C)		
	Rockland	Stony Point (T)	1,100 feet	Opposite side of river; northern end
	Orange	Newburgh (C)	1,700 feet	Opposite side of river
	Dutchess	Beacon (C)		
	Dutchess	Poughkeepsie (T)		
	Dutchess	Rhinebeck (T)		
	Dutchess	Red Hook (T)		
	Dutchess	Tivoli (V)		within the Town of Redhook
	Ulster	Lloyd (T)	900 feet	Opposite side of river
	Ulster	Esopus (T)	1,000 feet	Opposite side of river
	Ulster	Kingston (C)	1,400 feet	Opposite side of river
	Ulster	Saugerties (V)	1,000 feet	Opposite side of river
	Greene	Athens (C)	400 feet	Opposite side of river
	Rensselaer	Schodack (T)		
	Rensselaer	Castleton (V)		within Town of Schodack - same LWRP
	Rensselaer	Rensselaer (C)		
	Rensselaer	*North Greenbush (T)	2,500 feet	East of Albany
	Albany	Albany (C)		
Inland Waterways	Schenectady	Glenville(T); Niskayuna(T); Rotterdam(T); Scotia(V); Schenectady(C)		
	Montgomery	*Amsterdam (C)		
	Montgomery	Glen(T); Fultonville(V); Mohawk (T); Fonda(V)		
	Herkimer	Little Falls (C)		
	Monroe	Pittsford (T)		
Western Lake Ontario Niagara R. & Lake Erie	Monroe	Penfield (T)		
	Monroe	Rochester (C)		
	Erie	Tonawanda (C)		
	Niagara	North Tonawanda (C)		

C = City; T = Town; V = Village; * / Communities within 1/2 mile of the 90/110 Study Area only

Note: The 90/110 Study Area is used for analysis of Alternatives 90A, 90B, and 110 and consists of the existing 464-mile long Empire Corridor alignment. The 125 Study Area is used for analysis of Alternative 125 and consists of portions of the existing Empire Corridor and new alignment and is 450 miles long. The study area width is defined as being within ½ mile of the corridor centerline.

Source: NYSDOS Division of Coastal Resources. "New York State Coastal Management Program," Accessed January 11, 2012.

<http://nyswaterfronts.com/LWRP_Status.asp>.

The coastal zone along the Empire Corridor South also includes six state-designated Scenic Areas of Statewide Significance. The six SASSs in the study area are described below:

- **The Hudson Highlands SASS** encompasses a 20-mile stretch of the Hudson River and its shorelands and varies in width from approximately 1 to 6 miles. The SASS includes the east and west shorelands of the river, extending from Newburgh on the north to Peekskill on the south. The Hudson River has carved a spectacular gorge through the Hudson Highlands. The present shoreline configuration includes steep cliffs, bluffs, and gently sloping banks. Railroads hug the shoreline of the Hudson River and roads follow the hillside contours and inland valleys. There are two military sites within the SASS, the undeveloped parts of the Camp Smith Military Reservation and the West Point Military Academy, both with extensive areas of open space. The present-day land use pattern of the Hudson Highlands is dominated by state parkland, preserving much of the open space of the SASS.
- **The Estates District SASS** is located approximately 12 miles north of the Hudson Highlands SASS and 3 miles south of the Catskill-Olana SASS. The SASS extends approximately 27 miles to south of the Franklin D. Roosevelt Home National Historic Site. As its name implies, the Estates District SASS is dominated by over 20 major and numerous minor historic estates and the Hudson River toward which they are oriented. The landform consists of rolling topography behind steep bluffs, which drop 150 feet to the Hudson River. The shoreline of the Hudson is characterized by coves, marshes and scattered islands along the eastern shore. When seen from a distance, however, the east bank shoreline appears unbroken because railroad causeways bridge the natural indentations and transform the east bank into a single fluid line.
- **The Esopus/Lloyd SASS** encompasses a 17-mile stretch of the Hudson River and its western shorelands and varies significantly in width from 0.75 to 2 miles. The SASS extends from its northern boundary, which runs from south of the hamlet of Port Ewen, extending through Poughkeepsie to its southern boundary in the hamlet of Milton. The SASS includes the Hudson River from the mean high tide line on the eastern shore, for much of its length sharing a common boundary with the Estates District SASS on the eastern shorelands of the Hudson River. The SASS is dominated by a long stretch of bluffs along the Hudson River shorelands.
- **The Ulster North SASS** encompasses a 10-mile stretch of the Hudson River and its western shorelands and varies from 1.25 miles to 2.5 miles in width. The SASS extends from its northern boundary at the Ulster/Greene County line to its southern boundary at Ulster Landing Park. The SASS includes the Hudson River from the mean high tide line on the eastern shore for all of its length, sharing a common boundary with the Estates District SASS on the eastern shorelands of the Hudson River. It is characterized by a gently rolling upland landscape set above a steep bluff reaching elevations of 150 feet.
- **The Catskill-Olana Scenic Area of Statewide Significance (SASS)** consists of a portion of the Hudson River and its shorelands, an area approximately 5½ miles long and three miles wide. Its northern boundary incorporates Catskill, Rogers Island, and Greenport and extends south to Germantown. The area is known as the home of two major artists of the Hudson River School of Painting, Thomas Cole and Frederic Church. Thomas Cole, considered the father of the Hudson River School, America's first landscape painting movement, established his home and studio in Catskill. Frederic Church was Thomas Cole's only student. The promontory on the east shore is where Church constructed his estate, Olana. Catskill-Olana SASS exhibits an unusual variety of landforms including floodplains and steep ravines that rise 250 feet above; forested bluffs along the Hudson River; plateaus and rolling farmland south of Catskill Village and the promontory of Church's Hill. A variety of waterways are present, the Hudson River and its coves, channels and inlets being the most prominent.

- **The Columbia-Greene North Scenic Area of Statewide Significance (SASS)** is located roughly 3 miles north of the Catskill-Olana SASS. This SASS extends about 15 miles along the Hudson River from the vicinity of Schodack Landing in southern Rensselaer County and Coeymans hamlet in southern Albany County southward to Greenport, just north of the City of Hudson in Columbia. The scenic area's east and west boundaries generally follow the state coastal boundary with some variations. The SASS constitutes a predominantly rural area of low bluffs and ravines, flanked on the west shore by narrow alluvial plains and on the east shore, by a broader plateau. It is a quiet, pastoral area of working farms and river landings, which has changed little since the 19th century.

The coastal zone along the study area includes 31 Significant Coastal Fish and Wildlife Habitats (SCFWH) as shown in Exhibit G-15.

10.2 Environmental Consequences

Chapter 4 of the Tier 1 Final EIS addresses and compares the impacts of the Preferred Alternative, Alternative 90B, to those of the other alternatives considered (refer to Section 4.11). The potential effects impacts of the Base Alternative and other Build Alternatives are described in more detail below.

10.2.1 Base Alternative

The Base Alternative represents the baseline condition against which the alternatives are measured and incorporates improvements that have already been programmed and have been constructed. The Base Alternative will maintain weekday service frequencies. The Tier 1 Draft EIS addressed the potential impacts on coastal resources of the eight projects included in the Base Alternative.

10.2.2 Alternative 90A

Empire Corridor South

Alternative 90A includes construction of four miles of second track through urbanized areas of Manhattan (MPs 9 to 13). The **Lower Hudson Reach SCFWH** adjoins the railroad where it closely borders the Hudson River between MPs 1 to 17, but the second track would be located within the right-of-way, and this work is not anticipated to involve coastal impacts. Alternative 90A also includes 1.4 miles of new track (MPs 23.8 to 25.2), extending under the Tappan Zee Bridge, for the Tarrytown Pocket Track/Interlocking. This work would not affect SCFWHs or SASSs and would be within the right-of-way, and is not anticipated to involve coastal impacts.

With Alternative 90A, signal improvements proposed along 43 miles (MPs 32.8 and 75.8) extend through urban areas (Westchester and Dutchess Counties). Along this section, 10 miles of new third track (MPs 53 to 63) and improvements at the Poughkeepsie Yard/Storage Facility (MPs 71 to 75.8) are also proposed in Dutchess County. The **Croton River and Bay SCFWH** adjoins or crosses the railroad between MPs 31 to 33.5, and the **Haverstraw Bay SCFWH** adjoins the railroad between MPs 34 and 37. The railroad extends adjacent to or through the **Hudson River Mile 44 to 56 SCFWH** between MPs 42.5 and 54.5. The railroad adjoins the **Constitution Marsh SCFWH**, on the west, between MPs 50.5 to 52.3. The railroad extends through or adjoins the **Fishkill Creek SCFWH** between MPs 57.3 and 57.7. The railroad adjoins or extends through the **Wappinger Creek SCFWH** between MPs 63.8 and 65. The **Poughkeepsie Deepwater Habitat** extends within 200 feet west of

Exhibit G-15—Significant Coastal Fish and Wildlife Habitats within 1/2 Mile

County	Significant Coastal Fish and Wildlife Habitat	SCFWH Acreage	Significance Value
New York, Bronx, Westchester	Lower Hudson Reach	4,001	130
Westchester	Croton River and Bay	662	25
Westchester, Rockland	Haverstraw Bay	1,093	166
Rockland	Iona Island Marsh	12	71
Westchester, Rockland, Orange, Putnam	Hudson River Mile 44-56	2,997	148
Putnam	Constitution Marsh	425	69
Dutchess	Fishkill Creek	178	80
	North and South Tivoli Bays	1,202	162
	Vanderburgh Cove and Shallows	517	20
	Wappinger Creek	163	54
Dutchess, Ulster	Poughkeepsie Deepwater Habitat	2,384	110
	Esopus Estuary	378	98
	Kingston Deep Water Habitat	834	110
	The Flats	258	118
Ulster	Rondout Creek	6	70
Columbia	Germantown - Clermont Flats	989	121
	Mill Creek Wetlands	280	53
	Roeliff Jansen Kill	31	46
	Rogers Island	653	104
	Stockport Creek and Flats	2,000	115
Greene	Catskill Creek	18	54
	Coxsackie Creek	29	26
	Coxsackie Island Backwater	14	35
	Ramshorn Marsh	186	133
	Vosburg Swamp and Middle Ground Flats	526	57
Columbia, Greene, Rensselaer	Schodack and Houghtaling Islands and Schodack Creek	1,826	77
Rensselaer	Papscane Marsh and Creek	711	48
Albany	Shad and Schermerhorn Islands	379	22
Monroe	Irondequoit Bay and Creek	18	80
Erie	Times Beach Diked Disposal Site	26	30
Niagara	Lower Niagara River Rapids	2	73

Source: NYSDOS Division of Coastal Resources. "Significant Coastal Fish and Wildlife Habitat," Accessed January 15, 2012.

<http://nyswaterfronts.com/waterfront_natural_narratives.asp>

the railroad between MPs 67.5 and 79.4. New third track 53 to 53.2 and from 53.5 to 54.5 will adjoin the east side of the **Hudson River Mile 44-56 SCFWH**, but since work would be contained within the right-of-way, impacts to this area are not anticipated. The remaining SCFWHs would not be affected by Alternative 90A improvements, which would be confined to the right-of-way.

The railroad extends through the **Vanderburgh Cove and Shallows SCFWH** between MPs 85 and 87. However, no work is proposed in this area, the Rhinecliff Station improvements are located two miles to the north (MP 89.2). Between MPs 95.3 and 98.3, the railroad extends through the **North and South Tivoli Bays SCFWH**, which is one of four tidal wetland sites federally designated and state-protected as part of the **Hudson River National Estuarine Research Reserve**. Alternative 90A does not involve work at these locations, so no impacts would occur at these SCFWHs. Between MPs 99 and 100, the railroad closely borders on the **Esopus Estuary SCFWH**, extending within 100 feet over a distance of 700 feet. This is in the vicinity of the proposed crossover (CP99 at MPs 98.4 to 98.94), but this work would not extend outside of the right-of-way and is not anticipated to affect the Esopus Estuary SCFWH.

Between MPs 100.5 to 105.3, the railroad adjoins the eastern side of the **Germantown-Clermont Flats SCFWH**, and rock slope stabilization proposed at five locations from MPs 105.3 to 106 would occur within the right-of-way and is not anticipated to impact coastal impacts. At MP 108, the railroad closely borders the **Roeliff Jansen Kill SCFWH** to the east, and work for Alternative 90A is not anticipated at this location.

The railroad extends through the **Hudson Highlands SASS** between MPs 40.5 to 57.8. The signal improvements and addition of a third track (between MPs 53 and 58) would not affect the visual quality of this SASS.

This area extends through the **Estates District SASS**, which extends to the mean high tide line on the eastern shore of the Hudson River between MPs 76.5 and 103.5. The district borders the adjoining **Esopus-Lloyd SASS** (MPs 70 to 87.5) and **Ulster-North SASS** (MPs 95 to 103.5) to the west and including the river. The railroad passes through the **Catskill-Olana SASS** between MPs 87 and 112. Improvements at the Poughkeepsie Yard/Storage Facility (MPs 71 to 75.8) and Rhinecliff Station (MP 89.2), and Hudson Line Reliability Improvements at CPs 82 and 99 (MPs 82 and 99) would extend within the southern SASSs, but should not change the visual quality of these areas.

Between MPs 115.3 and 131.5, the railroad extends through the **Columbia-Green North SASS**. Rock slope stabilization proposed at MP 119.5 (one location) and MPs 128.1 to 130 (4 locations) would extend within this SASS, but would not change the scenic quality of the area.

No work is proposed in the immediate vicinity of the **Mill Creek Wetlands SCFWH** (MPs 125.5 to 127).

A new crossover, CP 136, is proposed at MP 136, and this work would extend within the **Papscane Marsh and Creek SCFWH** (MPs 135 to 139.3), but is not anticipated to impact the SCFWH.

The replacement of the Livingston Avenue Bridge (MPs 143.2 to 144) will occur within the coastal zone, but will not affect SCFWHs or SASSs. The disturbance to the coastal zone will be temporary in nature and represents a replacement of an existing structure.

Empire Corridor West/Niagara Branch

Other improvement proposed with Alternative 90A include approximately 10 miles of third track between MPs 169 and 178.5; Amsterdam Station improvements along the west end of this segment; and upgrades to interlockings and automatic block signals at three control points (CP 175, CP 239, and CP 248). Alternative 90A also includes Syracuse Station track improvements (MPs 290 to 294), third track improvements along 11 miles (MPs 373 to 382) west of the station, the addition of a third track along 11 miles located largely west of the urban area around Rochester and extending into Genesee County, and Buffalo-Depew Station improvements. These Alternative 90A improvements are located outside of the coastal zone.

The proposed double track along the Niagara Branch (at MP QDN17) intersect the coastal boundary along the Niagara River. These improvements would be located within the right-of-way and would, or did not, involve substantial coastal impacts.

10.2.3 Alternative 110**Empire Corridor South**

No additional work within Empire Corridor South, other than that proposed for Alternative 90A, are proposed, and coastal zone impacts are not anticipated to occur as this work is expected to be confined to the right-of-way.

Empire Corridor West/Niagara Branch

With Alternative 110, impacts to the coastal zone would be the same as for Alternative 90B.

10.2.4 Alternative 125**Empire Corridor South**

No additional work, other than that proposed for Alternative 90A, are proposed for Alternative 125 along the majority of Empire Corridor South, and coastal zone impacts are not anticipated to occur as this work is expected to be confined to the right-of-way. However, roughly one mile of the proposed 125 mph track would extend south from Albany-Rensselaer Station to cross the Hudson River at a new bridge to be constructed within the coastal zone. This will not affect SCFWHs or SASSs, but would involve work within the coastal waterway for a new bridge.

Empire Corridor West/Niagara Branch

This route rejoins the Empire Corridor through Syracuse and Rochester, including the section of track east of Rochester where the Empire Corridor West crosses the coastal zone at Irondequoit Creek (MP 362.92). Impacts to this coastal area would be the same as for Alternatives 90B and 110.

Alternative 125 also includes improvements proposed under Alternative 90A, which include double track along the Niagara Branch that will extend within the coastal zone along the Niagara River.

11. Aquifers

11.1 Existing Conditions

11.1.1 Empire Corridor South

All of the Build Alternatives follow the existing Empire Corridor South for the majority of its length, deviating only in Rensselaer County, where Alternative 125 splits off 1.6 miles south of where the existing Empire Corridor turns to the west. In New York and Bronx Counties, the rail alignment study area does not pass over any U.S. EPA regulated SSAs or any primary or principal aquifers of New York State.

In **Westchester County**, the rail alignment study area crosses over both primary and principal aquifers of New York State. The corridor passes over approximately 0.26 square mile of the Croton-Ossining Primary Aquifer north and south of the Croton-Harmon Station and approximately 0.03 square mile of principal aquifers just north of Peekskill.

In the remaining counties (Putnam, Dutchess, Columbia and Rensselaer counties), the Empire Corridor does not pass over any U.S. EPA regulated SSAs or New York State primary aquifers. However, the corridor does pass over small segments of New York State principal aquifers in all four counties. In **Putnam County**, the rail corridor crosses over 0.09 square feet of principal aquifers just south of Cold Spring. In **Dutchess County**, the rail corridor passes over approximately 0.03 square mile of principal aquifers south of New Hamburg.

There is approximately 0.41 square mile of principal aquifers underlying the rail corridor in **Columbia County**, mainly between Hudson and the northern county line. In **Rensselaer County**, the majority of the 90/110 Study Area passes over 0.80 square mile of principal aquifers and the 125 Study Area passes over 0.83 square mile of principal aquifers.

11.1.2 Empire Corridor West/Niagara Branch: 90/110 Study Area

There are two aquifer types that underlie the study area in **Albany County**: the Schenectady-Niskayuna SSA (0.43 square mile) and a New York State principal aquifer (0.93 square mile).

The study area passes over the same two aquifer types in **Schenectady County**: the Schenectady-Niskayuna SSA (1.60 square miles) and New York State principal aquifers (0.30 square mile). In addition to these two aquifer types, the study area also crosses over approximately 1.29 square miles of the Schenectady Primary Aquifer. The study area is completely underlain with one or more of the above-mentioned aquifer types in this county.

The study area in **Montgomery County** is completely underlain with approximately 4.47 square miles of New York State principal aquifers. There are no Sole-Source Aquifers or primary aquifers in the study area in this county, or in Herkimer or Oneida counties.

The study area in Herkimer and Oneida Counties is underlain with New York State principal aquifers (2.70 square miles in Herkimer and 1.83 square miles in Oneida). In **Herkimer County**, the majority of the study area is underlain with principal aquifers with the exception of a small area near Little

Falls. In **Oneida County**, principal aquifers underlie the study area for the majority of the eastern portion of the county, until just west of Rome, where no aquifer types are found under the study area. In **Madison County**, there are no aquifers located beneath the study area.

In **Onondaga County**, the study area overlies approximately 1.95 square miles of Baldwinsville Primary Aquifer. Where the railroad enters Syracuse, it passes over this primary aquifer, which extends to just east of the county line at which point it transitions to a New York State principal aquifer (0.20 square mile).

The study area also passes over only New York State principal aquifers in portions of Cayuga and Wayne counties. In **Cayuga County**, there is approximately 0.71 square mile of principal aquifers beneath the study area, mainly in the eastern half of the county. In **Wayne County**, the study area passes over approximately 2.41 square miles of principal aquifers, mainly in the western half of the county.

Monroe and Genesee counties are both underlain with portions of New York State primary aquifers. In **Monroe County**, the study area passes over approximately 0.88 square mile of the Irondegenessee Primary Aquifer, primarily between the eastern county boundary and Rochester. In **Genesee County**, the study area passes over approximately 0.37 square mile of the Batvia Primary Aquifer near the town of Batvia. There is also 0.37 square mile of New York State principal aquifers under the study area in Monroe County.

In **Erie County**, the study area passes over only one aquifer type. There is approximately 0.04 square mile of New York State principal aquifers scattered throughout the county. There are no aquifers beneath the study area in **Niagara County**.

11.1.3 Empire Corridor West/Niagara Branch: 125 Study Area

There are two aquifer types that underlie the study area in **Albany County**: the Schenectady-Niskayuna SSA (0.06 square mile) and a New York State principal aquifer (1.23 square miles).

The study area passes over only New York State principal aquifers in Schenectady, Schoharie, Montgomery, Herkimer, Oneida and Madison counties. In **Schenectady County**, only the eastern portion of the study area passes over 0.59 square mile of principal aquifers. The study area in eastern **Schoharie County** and a small area near the Montgomery County border are underlain with principal aquifers. In total, the study area passes over 0.33 square mile of principal aquifers in Schoharie County.

The study area in **Montgomery County** is underlain with approximately 0.41 square mile of New York State principal aquifers, primarily in the eastern part of the county. Principal aquifers occur sporadically in Herkimer, Oneida, and Madison counties and underlay 0.73 square mile in **Herkimer County**, 0.47 square mile in **Oneida County**, and 0.10 square mile in **Madison County**.

In **Onondaga County**, the study area overlies approximately 1.52 square miles of Baldwinsville Primary Aquifer. Where the railroad enters Syracuse, it passes over this primary aquifer, which continues along the study area to just east of the county line at which point it transitions to a New York State principal aquifer (0.20 square mile).

In **Cayuga County**, there is approximately 0.23 square mile of principal aquifers beneath the study

area, mainly in the eastern half of the county. In **Wayne County**, the study area passes over approximately 0.84 square mile of principal aquifers, sporadically throughout the county. As the corridor approaches the western border of Wayne County, it passes over 0.02 square mile of the Irondongenessee Primary Aquifer. The study area continues over approximately 0.87 square mile of the Irondongenessee Primary Aquifer in **Monroe County**, primarily between the eastern county boundary and Rochester. In addition, there is 0.29 square mile of New York State principal aquifers underneath the corridor in eastern Monroe County.

In Genesee and Erie counties, the study area passes over only one aquifer type: New York State principal aquifers. There is 0.12 square mile of principal aquifers under the study area in **Genesee County** and 0.28 square mile in **Erie County**. There are no aquifers beneath the study area in **Niagara County**.

11.2 Environmental Consequences

Chapter 4 of the Tier 1 Final EIS addresses and compares the impacts of the Preferred Alternative, Alternative 90B, to those of the other alternatives considered (refer to Section 4.12). The potential effects impacts of the Base Alternative and the other Build Alternatives are described in more detail below.

11.2.1 Base Alternative

Empire Corridor South

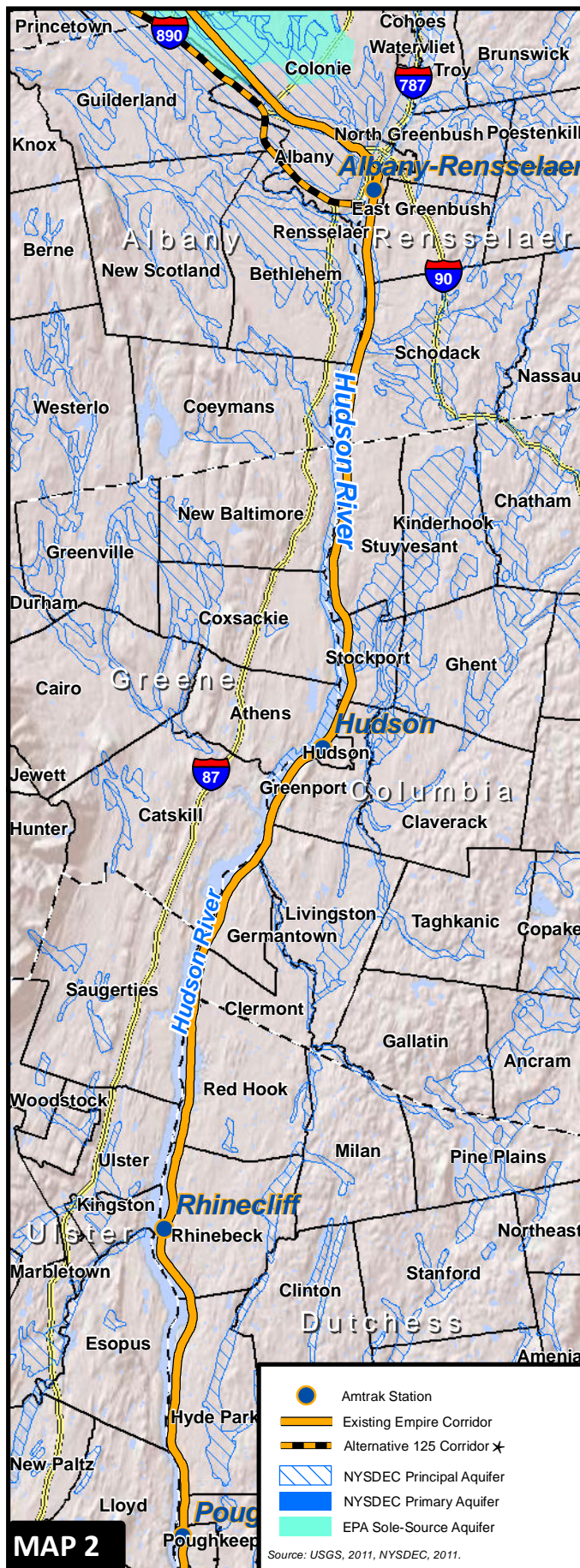
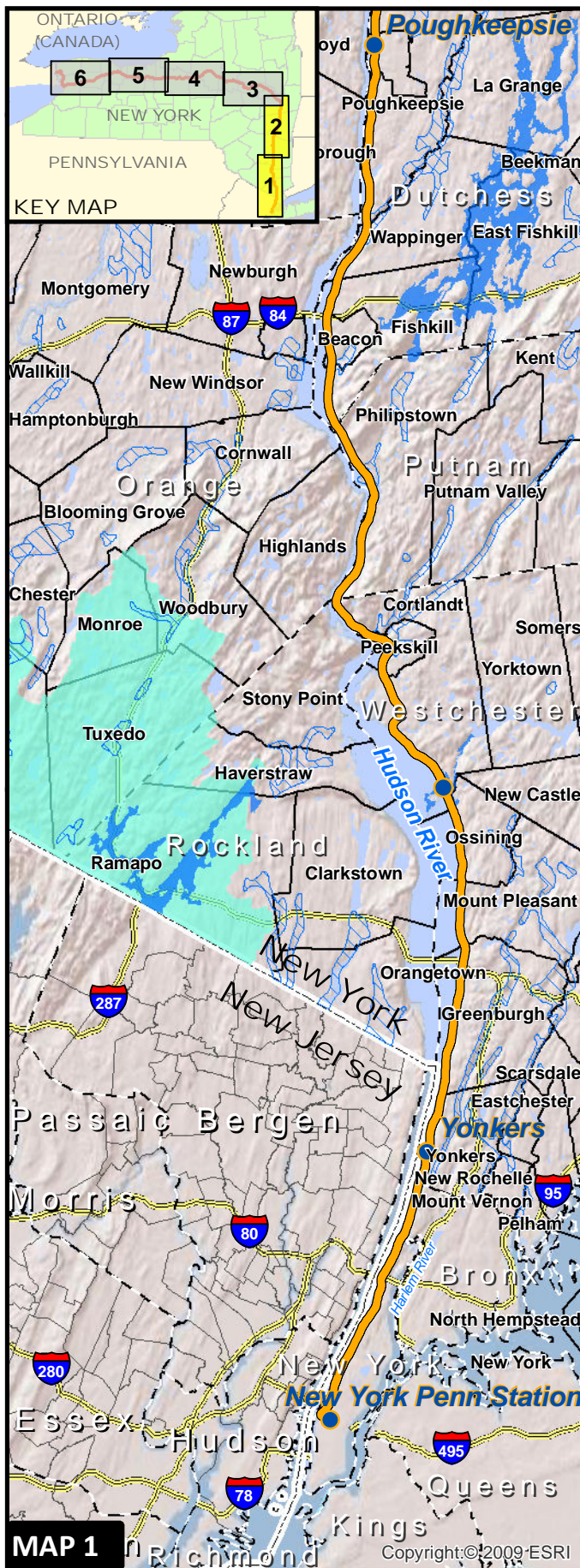
The Base Alternative represents the baseline condition against which the alternatives are measured and incorporates improvements that have already been programmed and have been constructed. The Tier 1 Draft EIS addressed the potential impacts on aquifers of the eight completed projects included in the Base Alternative. The Base Alternative will maintain weekday service frequencies.

11.2.2 Alternative 90A

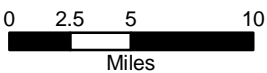
Empire Corridor South

Alternative 90A would include construction of four miles of second track through areas of Manhattan and Bronx Counties (MPs 9 to 13). In addition, 1.4 miles of new track would be constructed in Westchester County, extending under the Tappan Zee Bridge, for the Tarrytown Pocket Track/Interlocking (MPs 23 to 25). The proposed improvements in these areas would not pass over any identified aquifers; therefore, impacts from the proposed additional track would not be anticipated.

With Alternative 90A, signal improvements proposed along 43 miles (MPs 32.8 and 75.8) would extend through Westchester (northernmost portion), Putnam, and Dutchess Counties. Proposed improvements would pass over the Croton-Ossining Primary Aquifer (MPs 32 to 35), as well as principal aquifers located north of Peekskill in Westchester County (MPs 41 to 43), south of Cold Spring in Putnam County (MPs 51 to 52), and south of New Hamburg in Dutchess County (MP 65). Improvements would primarily occur within the existing right-of-way, and would likely not include a change to the existing water quality and impervious surfaces; therefore, the proposed signal improvements would have minimal direct and/or indirect impacts to the identified aquifers in these areas.



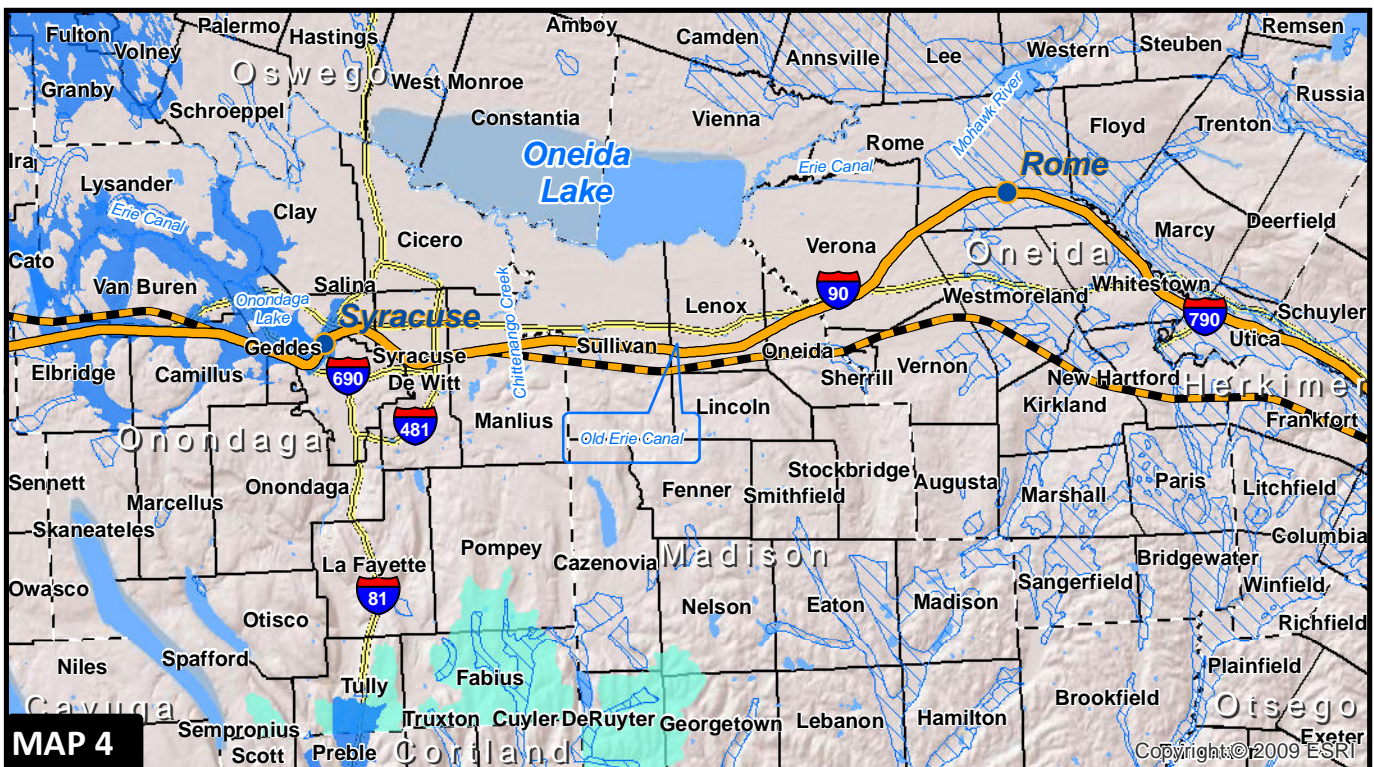
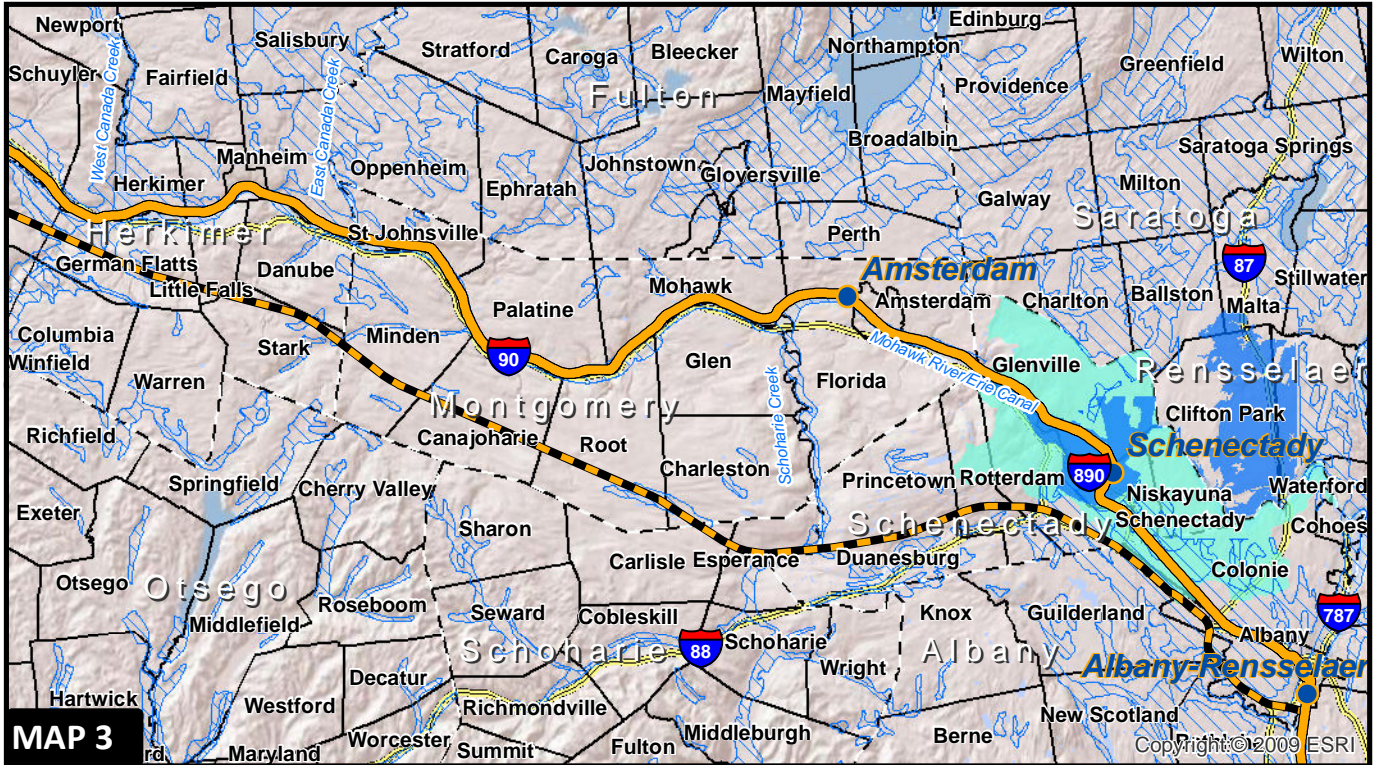
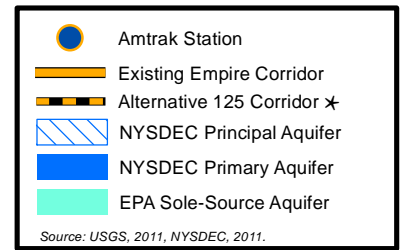
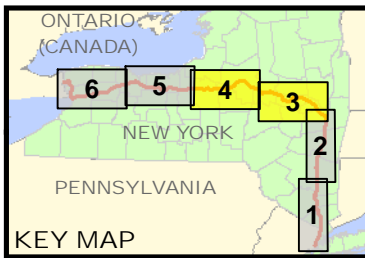
*Alt. 125 as shown is a potential corridor used to analyze the potential operating characteristics, environmental impacts and cost for this speed (125 mph) threshold.



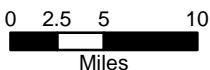
Aquifers
Exhibit G-15

Tier 1 EIS
High Speed Rail
Empire Corridor Program





*Alt. 125 as shown is a potential corridor used to analyze the potential operating characteristics, environmental impacts and cost for this speed (125 mph) threshold.



Aquifers
Exhibit G-15

Tier 1 EIS
High Speed Rail
Empire Corridor Program



In addition, 10 miles of new third track (MPs 53 to 63) and improvements at the Poughkeepsie Yard/Storage Facility (MPs 71 to 75.8) would be located within urban areas in Dutchess County. The proposed improvements in these areas would not pass over any identified aquifers; therefore, impacts from the proposed additional track would not be anticipated.

North of Poughkeepsie and south of Albany-Rensselaer Station (MPs 75.8 to 140), proposed improvements would include rock slope stabilization (MPs 105 to 130) and three new control points (CP 82, CP 99, and CP 136), as well as station improvements at Rhinecliff Station (MP 89) and Hudson Station (MP 113). New York State principal aquifers would underlie three small areas along this segment of track (near MPs 108, 111, and 135). The area underlying the Hudson River is designated as a New York State principal aquifer, and portions of the track would pass over, or would be located immediately adjacent to, the aquifer. These improvements would occur largely within the right-of-way and would not include substantial impacts outside the right-of-way. Although proposed improvements such as rock slope stabilization may potentially increase impervious surfaces, depending on the design, this would have minimal or no impacts on underlying aquifers.

In addition, Alternative 90A would include the replacement of the Livingston Avenue Bridge, which would extend over the Hudson River between the cities of Rensselaer and Albany. The area underlying the Hudson River is designated as a New York State principal aquifer. Depending on the construction and excavation depths and the design of the proposed bridge replacement, associated construction activities in this area would have the potential to directly and/or indirectly impact the aquifer, but these impacts would be temporary in nature. Potential impacts from this work could include the potential for discharges from excavation affecting groundwater quality.

Empire Corridor West

With Alternative 90A, track improvements would include approximately 10 miles of third track between MPs 169 and 178.5, and Amsterdam Station improvements along the west end of this segment. MP 169 is located on the westernmost edge of the Schenectady Primary Aquifer; the remainder of the segment, including the Amsterdam Station, would be generally located within a principal aquifer that generally underlies the Mohawk River. Adding rail ties and ballast for the new track would involve minimal impacts to underlying aquifers, as areas affected comprise a relatively small proportion of the entire recharge area; therefore, the proposed improvements would have minimal direct and/or indirect impacts to the above-mentioned primary and principal aquifers.

Upgrades to interlockings and automatic block signals would also occur at three control points in the Cities of Amsterdam, Utica, and Rome (CP 175, CP 239, and CP 248, respectively). The control points would be located within the boundaries of the principal aquifer, which would generally underlie the Mohawk River. Proposed improvements would primarily occur within the existing right-of-way, and would not likely include a change to the existing water quality and impervious surfaces.

Alternative 90A would include Syracuse Station track improvements (MPs 290 to 294), Rochester Station track and platform improvements (MPs 368 to 373), and third track improvements along 11 miles (MPs 373 to 382) west of the station. Where the railroad enters the City of Syracuse, it would pass over the Baldwinsville Primary Aquifer. Adding rail ties and even ballast for the new track would involve minimal impacts to underlying aquifers. Depending on the construction and excavation depths associated with the proposed station and platform improvements, station improvements could have the potential to minimally impact the Baldwinsville Primary Aquifer. The

improvements in the City of Rochester west of the station, including the addition of a third track along 11 miles located largely west of the City of Rochester (MPs 382 to 393) and extending into Genesee County would not be located over an aquifer; therefore, impacts would not be anticipated in this area.

11.2.3 Alternative 110

Empire Corridor South

No additional work within Empire Corridor South, other than that proposed for Alternative 90A, is proposed and additional impacts to underlying aquifers and/or adjoining surface waterways would not be anticipated to occur.

Empire Corridor West/Niagara Branch

With Alternative 110, track realignments and third and fourth track improvements would traverse the aquifer and surface waterways as described in Alternatives 90A and 90B. No other impacts other than those described above for Alternatives 90A and 90B would be anticipated for Alternative 110.

11.2.4 Alternative 125

Empire Corridor South

However, roughly one mile of the proposed 125 mph track would extend south from Albany-Rensselaer Station to cross the Hudson River. The area underlying the Hudson River is designated as a New York State principal aquifer; therefore, depending on the construction and excavation depths, construction activities in this area may have the potential to temporarily impact the aquifer.

Empire Corridor West/Niagara Branch

Construction of a new rail corridor could require more excavations and drainage alterations and therefore would involve a higher potential to directly impact existing groundwater resources than the other alternatives. These actions may include new bridge construction; therefore, there would be the potential for construction of bridge foundations to temporarily or possibly even permanently impact aquifers from the construction of Alternative 125. The sections below describe areas where the proposed railroad alignment would be located above an aquifer, and therefore have the potential to impact these aquifers.

This route covers 126 miles on new alignment between Rensselaer County and a point 8.5 miles east of Syracuse Station. Alternative 125 would extend through Albany and Schenectady Counties over a distance of 20 miles, following the New York State Thruway (I-87/I-90) over most of this distance. This segment of the alignment would extend over New York State principal aquifers (approximately MPs QH147 to QH162) and the Schenectady-Niskayuna Sole Source Aquifer (approximately MPs QH152 to QH153).

In Schoharie and Montgomery Counties, the alignment would extend over New York State principal aquifers (approximately MPs QH173 to QH177 and MPs QH180 to QH185).

In Herkimer and Oneida Counties, Alternative 125 would extend over New York State principal

aquifers in several small segments of the alignment (approximately MPs QH202, QH204, QH212, QH215, QH217 to QH220, QH224 to QH226, QH228 to QH230, QH235 to QH236, QH240 to QH241, and QH249 to QH250). In Madison County, the proposed track would extend over a New York State principal aquifer on the easternmost portion of the county (MP QH250).

In Onondaga County, the alignment would merge with the existing Empire Corridor through the City of Syracuse; any proposed improvements in this area would have the same impacts as stated in the 90A/90B/110 Alternatives. Alternative 125 would extend off the existing Empire Corridor on the western city limits and passes over several segments of the Baldwinsville Primary Aquifer (MPs QH285 to QH294). The alignment would then extend through Cayuga County, where only small portions (MPs QH304, QH305, and QH306) overlay New York State principal aquifers.

In Wayne County, Alternative 125 would extend across several small segments of New York State principal aquifers primarily along the eastern portion of the county (MPs QH313 to QH315, QH316, QH317.5, QH322, QH323, QH324.5, QH325.5, QH327, QH328.5, QH331.5, QH332.5, QH336 to QH337, QH340 to QH341, and QH342). The Ironodgenesee Primary Aquifer is located at the western county boundary (MP QH342). As the alignment extends through Monroe County, it would pass over the Ironodgenesee Primary Aquifer (MPs QH342 to QH345) until merging with the existing Empire Corridor east of the City of Rochester. The alignment would remain on the existing Empire Corridor to the east of the city; no other aquifers would be encountered in the remainder of Monroe County.

In Genesee County, with the exception of a small segment of New York State principal aquifer (approximately MP QH399), the Alternative 125 alignment would not pass over any aquifers. In Erie County, the alignment would extend over small segregated areas (MPs QH408 and QH409) underlain by New York State principal aquifers. The alignment would then merge with the existing Empire Corridor; no other aquifers would be encountered in either Erie or Niagara Counties.

12. General Ecology and Wildlife Resources

12.1 Existing Conditions

12.1.1 Ecological Zones

Along the 464-mile Empire Corridor 90/110 Study Area and the 450-mile 125 Study Area, the corridor centerlines transition through areas of urban, suburban, and rural habitats. Five ecological zones (Zones B, C, D, F, and H), as documented by the NYSDEC, are identified within each corridor study area (refer to Exhibit G-17). The topography ranges from low-elevation floodplains to steep hills, and vegetation is generally considered part of the north hardwood vegetation zone.⁴

The ecological zones are described below:

- **Zone B—Great Lakes Plain (major habitat):** This ecozone along Empire Corridor West and Niagara Branch comprises almost half of the study area. The two subzones are:
 - **Drumlin:** This zone is situated in the elm-red-maple northern hardwood natural vegetation zone. Structurally, it is a plateau with horizontal rock formations. The Drumlin subgroup has elongated hills that formed from glacial deposits.

⁴ NYSDEC, "EcoZones," Accessed June 2011. <<http://www.nysgis.state.ny.us/gisdata/inventories/details.cfm?DSID=1131>>.

- **Erie Ontario Plain:** This zone is situated in the elm-red-maple northern hardwood natural vegetation zone. Only about one-fifth of the land is forested. Structurally, it is a plateau with horizontal rock formations.
- **Zone C—Mohawk Valley (major/minor habitat):** The Mohawk Valley is in the northern hardwood natural vegetation zone. Nearly all the forest is on farms. Terrain consists of either rolling plains with gentle slopes, or hills with moderate slopes.
- **Zone D—Hudson Valley (major habitat), Central Hudson (minor habitat):** The Hudson Valley is part of the oak-northern hardwood natural vegetation zone. Pitch pines and scrub oaks are found in the sand plains in the Albany vicinity. A complex of hills and terraces are underlain with highly folded sedimentary rock.
- **Zone F—Hudson Highlands (major/minor habitat):** This zone is in the oak natural vegetation zone. Young stands of pioneer hardwoods and oaks are most common. This zone is continuous with the New Jersey Highlands to the south. The terrain is rolling to steep and is rough and stony.
- **Zone H—Manhattan Hills (major/minor habitat):** The Manhattan Hills are considered part of the oak and the oak-northern hardwood natural vegetation zones. Pioneer hardwoods and oaks are most common. The terrain is rolling to hilly.

12.1.2 Threatened and Endangered Species/EFH/Natural Heritage Significant Natural Habitats

Section 4.13 of the Tier 1 Final EIS describes the federally and state listed species occurrences by county. Exhibit G-18 and Exhibit G-19 present the list of federally and state-endangered and threatened species documented or suspected to potentially occur within the one-mile-wide study area for both the 90/110 mph and the 125 mph study areas. These totals include occurrences for species-specific screening distances for NYNHP within the ½ mile study buffer (1 mile around bald eagle nests, 0.81 mile of Blanding's turtle locations, 1.5 miles of timber rattlesnake locations, 2.5 miles from Indiana bat locations, 1.5 miles of non-wintering Northern long-eared bat locations and 5 miles from NLEB hibernacula). The totals also include species last documented before 1980 (historical records), or for which relatively precise locations or recent occurrences are not known or confirmed.

Section 4.13 of the Tier 1 Final EIS describes the thirteen species designated by the National Marine Fisheries Service as Essential Fish Habitats protected under the Magnuson-Stevens Fisheries Conservation and Management Act. Exhibit G-20 presents the life stages of the EFH species in the study area counties.

Section 4.13 discusses the distribution of significant natural communities located in the vicinity of the study area designated by the New York Natural Heritage Program, shown in Exhibit G-21.

Exhibit G-17—New York State Ecological Zones Located Within the Study Area

Zone	Habitat		Location	Acres in Study Area	
	Major	Minor		90/110 Study Area	125 Study Area
Zone B	Great Lakes Plain	Drumlin	Monroe	3,353	3,130
			Wayne	23,732	22,386
			Cayuga	7,344	7,087
			Onondaga	9,403	9,550
		Erie-Ontario Plain	Niagara	8,534	8,534
			Erie	19,870	21,524
			Genesee	19,204	19,025
			Monroe	16,432	15,773
			Wayne	0	307
			Onondaga	10,548	10,634
			Madison	9,009	9,311
			Oneida	11,348	11,283
Zone C	Mohawk Valley	Mohawk Valley	Oneida	6,900	2,871
			Herkimer	16,172	16,211
			Montgomery	25,696	13,618
			Schoharie	0	3,664
			Schenectady	3,928	7,670
Zone D	Hudson Valley	Central Hudson	Schenectady	5,546	3,670
			Albany	8,491	9,834
			Rensselaer	7,558	7,199
			Columbia	15,716	15,716
			Greene	2,792	2,792
			Dutchess	25,045	25,045
			Ulster	3,282	3,282
			Orange	234	234
Zone F	Hudson Highlands	Hudson Highlands	Dutchess	877	877
			Orange	1,410	1,410
			Putnam	4,629	4,629
			Rockland	559	559
			Westchester	1,433	1,433
Zone H	Manhattan Hills	Manhattan Hills	Rockland	48	48
			Westchester	18,036	18,036
			Bronx	878	878
			New York	4,195	4,195

Note: The 90/110 Study Area is used for analysis of Alternatives 90A, 90B, and 110 and consists of the existing 464-mile long Empire Corridor alignment. The 125 Study Area is used for analysis of Alternative 125 and consists of portions of the existing Empire Corridor and new alignment and is 450 miles long. The study area width is defined as being within a half-mile of the corridor centerline.

Source: NYSDEC, 2011.

Exhibit G-18—Federally & State Endangered-Threatened Species Occurrences in the 90/110 Study Area

County	# Endangered and Threatened Species		Species Names (Listing) (Bold: species with larger NYNHP buffers, <i>Italics:</i> potential/historic, not confirmed occurrence)
	Federal	State	
New York	2	4	Shortnose Sturgeon (FE/SE), Atlantic Sturgeon (FE), Peregrine Falcon (SE), Glomerate Sedge (ST), <i>Variable Rosette Grass (SE)</i>
Bronx	2	1	Shortnose Sturgeon (FE/SE), Atlantic Sturgeon (FE)
Westchester	4	17	Shortnose Sturgeon (FE/SE), Atlantic Sturgeon (FE), Northern Long-eared Bat (FT/ST), Bog Turtle (FT/SE) , Peregrine Falcon (SE), Short-eared Owl (SE), <i>Eastern Mud Turtle (SE)</i> , Bald Eagle (ST), Fence Lizard (ST), Northern Harrier (ST), <i>Eastern Grasswort (ST)</i> , King Rail (ST), Least Bittern (ST), Timber Rattlesnake (ST), <i>Spongy-Leaved Arrowhead (ST)</i> , New England Bulrush (ST), Water Pigmyweed (ST), Northern Shore Quillwort (ST)
Rockland	3	7	Shortnose Sturgeon (FE/SE), Atlantic Sturgeon (FE), Northern Long-eared Bat (FT/ST), Peregrine Falcon (SE), Bald Eagle (ST), <i>Spongy-leaved Arrowhead (ST)</i> , Annual Saltmarsh Aster (ST), Timber Rattlesnake (ST)
Putnam	3	15	Shortnose Sturgeon (FE/SE), Atlantic Sturgeon (FE), Northern Long-eared Bat (FT/ST), Peregrine Falcon (SE), Bald Eagle (ST), Least Bittern (ST), <i>Spongy-leaved Arrowhead (ST)</i> , Annual Saltmarsh Aster (ST), Fence Lizard (ST), Clustered Sedge (ST), Stalked Bugleweed (ST), Violet Wood-sorrel (ST), Timber Rattlesnake (ST) , <i>Lily-leaved Twayblade (ST)</i> , Great Plains Flat Sedge (ST), Smooth Beggar Ticks (ST)
Orange	4	10	Shortnose Sturgeon (FE/SE), Atlantic Sturgeon (FE), Indiana Bat (FE/SE) , Northern Long-eared Bat (FT/ST), Peregrine Falcon (SE), Marsh Straw Sedge (ST), Bald Eagle (ST), <i>Spongy-leaved Arrowhead (ST)</i> , New England Bulrush (ST), <i>Eastern Grasswort (ST)</i> , Timber Rattlesnake (ST)
Dutchess	4	28	Shortnose Sturgeon (FE/SE), Atlantic Sturgeon (FE), Indiana Bat (FE/SE) , Peregrine Falcon (SE), Smooth Beggar Ticks (ST), False Hop Sedge (ST), <i>Hudson River Water Nymph (SE)</i> , Provancher's Fleabane (ST), Fence Lizard (ST), Timber Rattlesnake (ST) , Blunt-lobed Grape Fern (SE), <i>Intertidal Spike Rush (SE)</i> , <i>Northern Tansy-mustard (SE)</i> , Shining Bedstraw (SE), <i>American Waterwort (SE)</i> , Bald Eagle (ST), Least Bittern (ST), Davis' Sedge (ST), Golden Club (ST), Swamp Cottonwood (ST), <i>Spongy-leaved Arrowhead (ST)</i> , Pied-billed Grebe (ST), King Rail (ST), Cat-tail Sedge (ST), <i>Marsh Horsetail (ST)</i> , Northern Long-eared Bat (FT/ST), Blanding's Turtle (ST) , <i>Field Pansy (SE)</i> , <i>Drummond's Rock Cress (ST)</i>
Ulster	4	6	Shortnose Sturgeon (FE/SE), Atlantic Sturgeon (FE), Indiana Bat (FE/SE) , Northern Long-eared Bat (FT/ST), Bald Eagle (ST), Least Bittern (ST), <i>Spongy-Leaved Arrowhead (ST)</i>
Columbia	4	18	Shortnose Sturgeon (FE/SE), Atlantic Sturgeon (FE), Indiana Bat (FE/SE) , Northern Long-eared Bat (FT/ST), Hudson River Water Nymph (SE), Smooth Beggar Ticks (ST), <i>American Waterwort (SE)</i> , <i>Intertidal Spike Rush (ST)</i> , Bald Eagle (ST), Northern Harrier (ST), Least Bittern (ST), Pied-billed Grebe (ST), Provancher's Fleabane (ST), Peregrine Falcon (SE), Davis' Sedge (ST), Golden Club (ST), <i>Spongy-leaved Arrowhead (ST)</i> , Shrubby St. John's Wort (ST), Marsh Lousewort (ST)
Greene	3	12	Shortnose Sturgeon (FE/SE), Atlantic Sturgeon (FE), Northern Long-eared Bat (FT/ST), <i>American Waterwort (SE)</i> , <i>Intertidal Spike Rush (SE)</i> , <i>Navel Cornsalad</i>

Exhibit G-18—Federally & State Endangered-Threatened Species Occurrences in the 90/110 Study Area

County	# Endangered and Threatened Species		Species Names (Listing) (Bold : species with larger NYNHP buffers, <i>Italics</i> : potential/historic, not confirmed occurrence)
	Federal	State	
			(<i>SE</i>), Bald Eagle (ST), Least Bittern (ST), Smooth Beggar Ticks (ST), Davis' Sedge (ST), Golden Club (ST), Northern Harrier (ST), Pied-billed Grebe (ST)
Rensselaer	2	5	Shortnose Sturgeon (FE/SE), Atlantic Sturgeon (FE), <i>American Waterwort (SE)</i> , Bald Eagle (ST), Golden Club (ST), Least Bittern (ST)
Albany	3	7	Shortnose Sturgeon (FE/SE), Atlantic Sturgeon (FE), Karner Blue (FE/SE), <i>American Knotweed (SE)</i> , <i>Slender Yellow-eyed Grass (ST)</i> , Peregrine Falcon (SE), Bald Eagle (ST), Frosted Elf (ST)
Schenectady	1	3	Karner Blue (FE/SE), Bald Eagle (ST), Side-oats Grama (SE)
Montgomery	1	4	Northern Long-eared Bat (FT/ST), Timber Rattlesnake (ST) , Peregrine Falcon (SE), Bald Eagle (ST)
Herkimer	0	1	Bald Eagle (ST)
Oneida	0	5	Peregrine Falcon (SE), Lake Sturgeon (ST), Bald Eagle (ST), Least Bittern (ST), <i>Sedge Wren (ST)</i> , Pied-billed Grebe (ST)
Madison	0	3	Northern Harrier (ST), Lake Sturgeon (ST), <i>Hairy Small-leaved Tick Trefoil (ST)</i>
Onondaga	2	6	Indiana Bat (FE/SE) , Northern Long-eared Bat (FT/ST), Straight-leaf Pondweed (SE), Bald Eagle (ST), <i>Hairy Small-leaf Tick-trefoil (ST)</i> , American Gromwell (ST)
Cayuga	1	8	Indiana Bat (FE/SE) , Lake Sturgeon (ST), Least Bittern (ST), Short-eared Owl (SE), <i>Black Tern (SE)</i> , <i>Northern Harrier (ST)</i> , Bald Eagle (ST), Pied-billed Grebe (ST)
Wayne	1	8	Indiana Bat (FE/SE) , <i>Northern Harrier (ST)</i> , Short-eared Owl (SE), Spreading Chervil (SE), <i>Black Tern (SE)</i> , Bald Eagle (ST), Pied-billed Grebe (ST), Least Bittern (ST)
Monroe	0	5	Peregrine Falcon (SE), <i>Log Fern (SE)</i> , <i>Sweet-scented Indian Plantain (SE)</i> , Pied-billed Grebe (ST), <i>Green Gentian (ST)</i>
Genesee	1	2	Northern Long-eared Bat (FT/ST), <i>Log Fern (SE)</i>
Erie	1	6	Northern Long-eared Bat (FT/ST), Peregrine Falcon (SE), Linear-leaved Loosestrife (ST), Northern Harrier (ST), Lake Sturgeon (ST), <i>Marsh Horsetail (ST)</i>
Niagara	2	8	, <i>Puttyroot (SE)</i> , Northern Harrier (ST), Short-eared Owl (SE), Stiff Flat-topped Goldenrod (ST), Sky Blue Aster (ST), Smooth Cliffbrake (ST), Elk Sedge (ST), Smaller Fringed Gentian (ST)

Sources: U.S. FWS, 2011; NYSDEC, New York Natural Heritage Program, 2021

Note: FE=Federally Endangered; FT=Federally Threatened; SE=State Endangered; ST=State Threatened;

Species shown in **BOLD** have a species-specific screening distance for NYNHP within the ½ mile study buffer (1 mile around bald eagle nests, 0.81 mile of Blanding's turtle locations, 1.5 miles of timber rattlesnake locations, 2.5 miles from Indiana bat locations, 1.5 miles of non-wintering Northern long-eared bat locations and 5 miles from NLEB hibernacula).

Species shown in *ITALICS* are those last documented before 1980 (historical records), or for which relatively precise locations or recent occurrences are not known or confirmed.

The 90/110 Study Area is used for analysis of Alternatives 90A, 90B, and 110 and consists of the existing 464-mile long Empire Corridor alignment. The study area width is defined as being within a ½ mile of the corridor centerline.

Exhibit G-19—Federally and State Endangered-Threatened Species Occurrences in the 125 Study Area

County	# Endangered and Threatened Species		Species Names (Listing) (Bold: species with larger NYNHP buffers, <i>Italics:</i> potential/historic, not confirmed occurrence)
	Federal	State	
New York	2	4	Shortnose Sturgeon (FE/SE), Atlantic Sturgeon (FE), Peregrine Falcon (SE), Glomerate Sedge (ST), <i>Variable Rosette Grass (SE)</i>
Bronx	2	1	Shortnose Sturgeon (FE/SE), Atlantic Sturgeon (FE)
Westchester	4	17	Shortnose Sturgeon (FE/SE), Atlantic Sturgeon (FE), Northern Long-eared Bat (FT/ST), Bog Turtle(FT/SE) , Peregrine Falcon (SE), Short-eared Owl (SE), King Rail (ST), Least Bittern (ST), Timber Rattlesnake (ST), <i>Spongy-Leaved Arrowhead (ST)</i> , New England Bulrush (ST), Water Pigmyweed (ST), Northern Shore Quillwort (ST), <i>Eastern Mud Turtle (SE)</i> , Bald Eagle (ST), Fence Lizard (ST), Northern Harrier (ST), <i>Eastern Grasswort (ST)</i>
Rockland	3	7	Shortnose Sturgeon (FE/SE), Atlantic Sturgeon (FE), Northern Long-eared Bat (FT/ST), Peregrine Falcon (SE), Bald Eagle (ST), Spongy Arrowhead (ST), Annual Saltmarsh Aster (ST), Timber Rattlesnake (ST)
Putnam	3	15	Shortnose Sturgeon (FE/SE), Atlantic Sturgeon (FE), Northern Long-eared Bat (FT/ST), Peregrine Falcon (SE), Bald Eagle (ST), Least Bittern (ST), Great Plains Flat Sedge (ST), Smooth Beggar Ticks (ST), Spongy-leaved Arrowhead (ST), Annual Saltmarsh Aster (ST), Fence Lizard(ST), Clustered Sedge (ST), Violet Wood-sorrel (ST), Stalked Bugleweed (ST), <i>Lily-leaved Twayblade (SE)</i> , Timber Rattlesnake (ST)
Orange	4	10	Shortnose Sturgeon (FE/SE), Atlantic Sturgeon (FE), Indiana Bat (FE/SE) , Northern Long-eared Bat (FT/ST), Timber Rattlesnake (ST) , Eastern Grasswort (ST), Peregrine Falcon (SE), New England Bulrush (ST), Bald Eagle (ST), Spongy-leaved Arrowhead (ST), Marsh Straw Sedge (ST)
Dutchess	4	28	Shortnose Sturgeon (FE/SE), Atlantic Sturgeon (FE), Indiana Bat (FE/SE) , Northern Long-eared Bat (FT/ST), Peregrine Falcon (SE), Smooth Beggar Ticks (ST), <i>Hudson River Water Nymph (SE)</i> , False Hop Sedge (ST), Provancher's Fleabane (ST), Fence Lizard (ST), <i>Drummond's Rock Cress (ST)</i> , Blunt-lobed Grape Fern (ST), <i>Intertidal Spike Rush (ST)</i> , <i>Northern Tansy Mustard (SE)</i> , Shining Bedstraw (SE), <i>American Waterwort (SE)</i> , Bald Eagle (ST), Least Bittern (ST), Davis' Sedge (ST), Golden Club (ST), Swamp Cottonwood (ST), Spongy-leaved Arrowhead (ST), Pied-billed Grebe (ST), King Rail (ST), Cat-tail Sedge (ST), <i>Marsh Horsetail (ST)</i> , <i>Field Pansy (SE)</i> , Timber Rattlesnake (ST) , Blanding's Turtle (ST)
Ulster	4	6	Shortnose Sturgeon (FE/SE), Atlantic Sturgeon (FE), Indiana Bat (FE/SE) , Northern Long-eared Bat (FT/ST), Bald Eagle (ST), <i>Spongy-Leaved Arrowhead (ST)</i>
Columbia	4	18	Shortnose Sturgeon (FE/SE), Atlantic Sturgeon (FE), Indiana Bat (FE/SE) , Northern Long-eared Bat (FT/ST), Hudson River Water Nymph (SE), Smooth Beggar Ticks (ST), <i>Intertidal Spike Rush (ST)</i> , <i>American Waterwort (SE)</i> , Northern Harrier (ST), Bald Eagle (ST), Least Bittern (ST), Pied-billed Grebe (ST), Provancher's Fleabane (ST), Peregrine Falcon (SE), Davis' Sedge (ST), Golden Club (ST), Spongy-leaved Arrowhead (ST), Shrubby St. John's Wort (ST), Marsh Lousewort (ST)

Exhibit G-19—Federally and State Endangered-Threatened Species Occurrences in the 125 Study Area

County	# Endangered and Threatened Species		Species Names (Listing) (Bold : species with larger NYNHP buffers, <i>Italics</i> : potential/historic, not confirmed occurrence)
	Federal	State	
Greene	3	12	Shortnose Sturgeon (FE/SE), Atlantic Sturgeon (FE), Smooth Beggar Ticks (ST), Northern Harrier (ST), Pied-billed Grebe (ST), <i>Intertidal Spike Rush (SE)</i> , Northern Long-eared Bat (FT/ST), <i>American Waterwort (SE)</i> , <i>Navel Corsalad (SE)</i> , Bald Eagle (ST), Least Bittern (ST), Davis' Sedge (ST), Golden Club (ST)
Rensselaer	2	5	Shortnose Sturgeon (FE/SE), Atlantic Sturgeon (FE), Least Bittern (ST), <i>American Waterwort (SE)</i> , Bald Eagle (ST), Golden Club (ST)
Albany	3	9	Shortnose Sturgeon (FE/SE), Atlantic Sturgeon (FE), Karner Blue (FE/SE), Slender Marsh Blue Grass (ST), Bird's Foot Violet (ST), <i>American Knotweed (SE)</i> , <i>Slender Yellow-eyed Grass (ST)</i> , Frosted Elfin (ST), Peregrine Falcon (SE), Bald Eagle (ST)
Schoharie	0	0	
Schenectady	1	1	Karner Blue (FE/SE)
Montgomery	1	1	Northern Harrier (ST), Short-eared Owl (SE)
Herkimer	0	2	Northern Harrier (ST), Short-eared Owl (SE)
Oneida	0	1	Lake Sturgeon (ST)
Madison	0	5	Lake Sturgeon (ST), Schweinitz's Sedge (ST), Goldenseal (ST), Marsh Arrow Grass (ST), <i>Hairy Small-leaved Tick Trefoil (ST)</i>
Onondaga	2	7	Indiana Bat (FE/SE) , Northern Long-eared Bat (FT/ST), American Gromwell (ST), Lake Sturgeon (ST), <i>Hairy Small-leaved Tick Trefoil (ST)</i> , Straight-leaved Pondweed (SE), Bald Eagle (ST)
Cayuga	0	4	Bald Eagle (ST), Lake Sturgeon (ST), Three Birds Orchid (ST), Northern Bog Aster (ST)
Wayne	0	1	Bald Eagle (ST)
Monroe	0	4	Peregrine Falcon (SE), <i>Sweet-scented Indian-plantain (SE)</i> , Pied-billed Grebe (ST), <i>Green Gentian (ST)</i>
Genesee	2	14	Bog Turtle (FT/SE) , Sticky False Asphodel (ST), Northern Harrier (ST), Low Nut Sedge (ST), Dragon's Mouth Orchid (ST), White Death Camas (ST), Northern Bog Sedge (SE), Small White Lady's Slipper (SE), Creeping Juniper (SE), Ohio Goldenrod (ST), Deer's Hair Club Sedge (ST), Marsh Arrow Grass (ST), Marsh Valerian (SE), Queen Snake (SE), Eastern Massasauga (FT/SE)
Erie	0	7	Peregrine Falcon (SE), <i>Linear-leaved Loosestrife (SE)</i> , Northern Harrier (ST), Lake Sturgeon (ST), <i>Marsh Horsetail (ST)</i> , Upland Sandpiper (ST), Pied-billed Grebe (ST)
Niagara	0	8	Short-eared Owl (SE), Stiff Flat-topped Goldenrod (ST), Sky-blue Aster (ST), Smooth Cliffbrake (ST), Elk Sedge (ST), Smaller Fringed Gentian (ST), <i>Puttyroot (SE)</i> , Northern Harrier (ST)

Sources: U.S. FWS, 2011; NYSDEC, New York Natural Heritage Program, 2021

Note: FE=Federally Endangered; FT=Federally Threatened; SE=State Endangered; ST=State Threatened;

Species shown in **BOLD** have a species-specific screening distance for NYNHP within the ½ mile study buffer (1 mile around bald eagle nests, 0.81 mile of Blanding's turtle locations, 1.5 miles of timber rattlesnake locations, 2.5 miles from Indiana bat locations, 1.5 miles of non-wintering Northern long-eared bat locations and 5 miles from NLEB hibernacula). Species shown in *ITALICS* are those last documented before 1980 (historical records), or for which relatively precise locations or recent occurrences are not known or confirmed. The 125 Study Area is used for analysis of Alternative 125 and consists of portions of the existing Empire Corridor and new alignment and is 450 miles long. The study area width is defined as being within a ½ mile of the corridor centerline.

Exhibit G-20—Essential Fish Habitat in the Study Area

EFH Species/Stages		County of Potential Occurrence*									
Common Name Scientific Name	Life Stage	New York	Bronx	Westchester	Rockland	Putnam	Orange	Dutchess	Ulster	Columbia	Greene
Red Hake <i>Urophycis chuss</i>	Larvae	x	x	x	x	x	x	x	x	x	x
	Juveniles	x	x	x	x	x	x	x	x	x	x
	Adults	x	x	x	x	x	x	x	x	x	x
	Eggs	x	x	x	x	x	x	x	x	x	x
Winter Flounder <i>Pseudopleuronectes americanus</i>	Eggs	x	x	x	x	x	x	x	x	x	x
	Larvae	x	x	x	x	x	x	x	x	x	x
	Juveniles	x	x	x	x	x	x	x	x	x	x
	Adults	x	x	x	x	x	x	x	x	x	x
Window-pane Flounder <i>Scopthalmus aquosus</i>	Eggs	x	x	x	x	x	x	x	x	x	x
	Larvae	x	x	x	x	x	x	x	x	x	x
	Juveniles	x	x	x	x	x	x	x	x	x	x
	Adults	x	x	x	x	x	x	x	x	x	x
Atlantic Sea Herring <i>Clupea harengus</i>	Larvae	x	x	x	x	x	x	x	x	x	x
	Juveniles	x	x	x	x	x	x	x	x	x	x
	Adults	x	x	x	x	x	x	x	x	x	x
Bluefish <i>Pomatomus saltatrix</i>	Juveniles	x	x	x	x	x	x	x	x	x	x
	Adults	x	x	x	x	x	x	x	x	x	x
Atlantic butterflyfish <i>Peprilus triacanthus</i>	Larvae	x	x	x	x	x	x	x	x	x	x
	Juveniles										
	Adults										
Clearence Skate <i>Raja eglanteria</i>	Juveniles	x	x	x	x	x	x	x	x	x	x
	Adults	x	x	x	x	x	x	x	x	x	x
Summer flounder <i>Paralichthys dentatus</i>	Larvae	x	x	x	x	x	x	x	x	x	x
	Juveniles	x	x	x	x	x	x	x	x	x	x
	Adults	x	x	x	x	x	x	x	x	x	x
Little Skate <i>Leucoraja erinacea</i>	Juveniles	x	x	x	x	x	x	x	x	x	x
	Adults	x	x	x	x	x	x	x	x	x	x
Longfin Inshore Squid <i>Doryteuthis pealeii</i>	Eggs	x	x	x	x	x	x	x	x	x	x
Winter Skate <i>Leucoraja ocellata</i>	Juveniles	x	x	x	x	x	x	x	x	x	x
	Adults	x	x	x	x	x	x	x	x	x	x

*Essential Fish Habitat conditions are not present for listed species north of Greene County

Sources: <http://www.nero.noaa.gov/hcd/list.htm>http://library.fws.gov/pubs5/web_link/text/low_hud.htm#Table21-1http://hrnerr.org/public/Benthic/bathy/GE_hudson_bathy.html

Exhibit G-21—Significant Natural Communities in the Study Area

County	Number of Communities	Types of Significant Natural Communities
Westchester	7	Brackish intertidal mudflats, chestnut oak forest, oak tulip tree forest, rocky summit grassland, Appalachian oak hickory forest, brackish tidal marsh, tidal river.
Rockland	3	Brackish intertidal mudflats, brackish tidal marsh, tidal river.
Putnam	11	Chestnut oak forest, pitch pine-oak heath rocky summit (three locations), red cedar rocky summit, Appalachian oak hickory forest, oak tulip tree forest, brackish intertidal mudflats, brackish tidal marsh, chestnut oak forest (two locations).
Orange	3	Brackish tidal marsh, brackish intertidal mudflats, tidal river.
Dutchess	30	Freshwater tidal swamp (four locations), freshwater tidal marsh (six locations), hemlock northern hardwood forest, freshwater intertidal mudflats (four locations), freshwater intertidal shore (two locations), brackish intertidal mudflats, brackish tidal marsh, hemlock northern hardwood forest, limestone woodland, oak tulip tree forest, red cedar rocky summit, chestnut oak forest, pitch pine-oak heath rocky summit, red cedar rocky summit, Appalachian oak hickory forest, oak tulip tree forest, rocky summit grassland, tidal river.
Ulster	5	Freshwater intertidal shore, freshwater tidal swamp, freshwater intertidal mudflats, freshwater tidal marsh, tidal river.
Columbia	23	Freshwater intertidal shore, calcareous cliff community, freshwater tidal swamp (three locations), freshwater tidal marsh (nine locations), freshwater intertidal shore, freshwater intertidal mudflats (six locations), floodplain forest, tidal river.
Greene	11	Freshwater tidal marsh (five locations), floodplain forest, freshwater intertidal mudflats (two locations), freshwater tidal swamp, freshwater tidal creek (two locations).
Rensselaer	3	Floodplain forest, freshwater tidal marsh, tidal river.
Albany	6	Freshwater tidal marsh, pine barrens vernal pool (two locations), pitch pine-scrub oak barrens, pitch pine-oak forest, tidal river.
Montgomery	2	Calcareous cliff community, calcareous talus slope woodland.
Herkimer	1	Floodplain forest.
Onondaga	1	Inland salt pond.
Cayuga	2	Floodplain forest, ¹ Rich graminoid fen. ²
Genesee	3	Silver-maple ash swamp, ² Rich graminoid fen, ² Northern white cedar swamp. ²
Wayne	3	Floodplain forest (two locations), silver maple-ash swamp.
Erie	1	Rich graminoid fen. ¹
Niagara	2	Calcareous talus slope woodland, calcareous cliff community.

¹ Occurs only in the Empire Corridor 90/110 study area.

² Occurs only in the Empire Corridor 125 study area.

Note: The 90/110 Study Area is used for analysis of Alternatives 90A, 90B, and 110 and consists of the existing 464-mile long Empire Corridor alignment. The 125 Study Area is used for analysis of Alternative 125 and consists of portions of the existing Empire Corridor and new alignment and is 450 miles long. The study area width is defined as being within a half-mile of the corridor centerline.

Source: NYSDEC, New York Natural Heritage Program, May 2021. Biodiversity Databases, Element Occurrence Record Digital Data Set. Albany, New York

12.2 Environmental Consequences

Chapter 4 of the Tier 1 Final EIS addresses and compares the impacts of the Preferred Alternative, Alternative 90B, to those of the other alternatives considered (refer to Section 4.13). The potential effects impacts of the Base Alternative and the other Build Alternatives are described in more detail below.

12.2.1 Base Alternative

The Base Alternative represents the baseline condition against which the alternatives are measured and incorporates improvements that have already been programmed. The Base Alternative will maintain weekday service frequencies. The Tier 1 Draft EIS addressed the potential impacts on ecology and wildlife of the eight projects included in the Base Alternative. Work associated with this alternative would not likely have resulted in impacts caused by habitat fragmentation, since track improvements were located largely within the existing rail beds or railroad rights-of-way.

12.2.2 Alternative 90A

New tracks proposed under this alternative would not extend more than 15 feet laterally from the current mainline tracks. As such, habitat fragmentation is not anticipated since work would be conducted within the right-of-way. Additional station improvements proposed under this alternative would be located within existing building and track infrastructure and would not likely impact ecological resources.

Empire Corridor South

Alternative 90A would include construction of four miles of second track through urbanized areas of Manhattan (SRP-1, MPs 9 to 13), and 1.4 miles of new track extending under the Tappan Zee Bridge (SRP-2) for the Tarrytown Pocket Track/Interlocking. There are several records of sensitive species and Essential Fish Habitat within a half-mile of the corridor centerline in the vicinity of these proposed work locations, primarily occurring in the Hudson River. Construction could affect aquatic species if construction work is conducted within or indirectly affects the Hudson River.

Ten miles of new third track (SRP-3, MPs 53 to 63) would be installed within or adjacent to a bird conservation area and areas of known occurrences of significant natural communities and protected plant and wildlife populations. Improvements at the Poughkeepsie Yard/Storage Facility (ES-13, MPs 71 to 75.8) and rock slope stabilization north of the Poughkeepsie station (ES-04, five locations between MPs 105.3 to 130, one location at MP 119, and 4 locations at MPs 128.1-130) would include work in areas where there is a potential for the presence of protected species and significant natural communities to occur within a half-mile of the corridor centerline. In addition, rock slope stabilization near MP 130 would include work near the Shodack Island bird conservation area. Work in the above-mentioned areas that may involve tree clearing or disturbance of terrestrial or aquatic habitats may impact nesting bird habitat, protected species or significant natural communities, and any work conducted over or directly adjacent to the Hudson River would have the potential to impact aquatic resources. However, work in these areas would occur within the existing right-of-way thereby minimizing the potential for ecological impacts.

Alternative 90A would include the replacement of the Livingston Avenue Bridge (ES-15) over the Hudson River. There are records of protected resources at this location, and work there would have the potential to impact EFH, protected aquatic species, or other aquatic habitat through temporary or permanent direct habitat disturbance.

Empire Corridor West/Niagara Branch

Track improvements along the Empire Corridor West/Niagara Branch would include 10 miles of third track between MPs 169 and 179 (EW-14a), and Amsterdam Station improvements along the west end of this segment (EIS-1, MP 177.6). Additionally, installation of a third track and access road at approximately MP 167 would pass through an area that is currently vegetated. There is one known protected resource with a potential for occurrence within a half-mile of the corridor centerline along this stretch of tracks. However, any vegetation removal would have the potential to impact terrestrial habitat, such as nesting birds. Updates to three control points (EW-05, MPs 175, 239 and 248) would not likely impact ecological resources because work would be performed in existing right-of-way thereby minimizing the potential for ecological impacts.

Alternative 90A would include Syracuse Station track improvements (EIS-6, MPs 290 to 294), addition of a third track along 11 miles located largely west of the designated urban area around Rochester (EW-20, MPs 382 to 393), and third track improvements along 11 miles (EW-16, MPs 373 to 382) west of the station. These are primarily urban areas, and there are four known occurrences of state-listed species (including one federally/state endangered species) and one potential/historic (pre-1980) occurrence of a state-endangered species within a half-mile of the corridor centerline at the proposed work locations. Additionally, these sections of railroad would extend in close proximity to Riga Swamp and the Three Rivers Wildlife Management Area/Three Mile Bay WMA.

Station improvements at the Buffalo-Depew Station (EIS-10, MPs 429 to 433) would involve potential disturbance to vegetated areas within the current station footprint. Although there are no known occurrences of protected plant, wildlife or habitats in these areas, this work could impact nesting birds through the removal of vegetation. Double track (EW-17, MPs QDN17 to QDN23.2) along the Niagara Branch and Niagara Falls Maintenance Facility and track improvements (EW-18 and EIS-12, MPs 25 to 28) would not involve work outside of the existing right-of-way, and, therefore, impacts to ecological resources would be unlikely. However, in areas adjoining the right-of-way, sightings of two species of state-listed birds have occurred at one location.

12.2.3 Alternative 110

Due to an increase in Maximum Authorized Speed and an even greater increase in track realignments outside of the right-of-way proposed with Alternative 110, impacts such as habitat encroachment would be more likely to occur than with Alternatives 90A and 90B. The total number of sensitive resources identified as potentially occurring within a half-mile of the proposed physical improvement areas for Alternative 110 would be the same as for Alternative 90B. Alternative 110 would have a higher likelihood of impacts to ecological resources than Alternatives 90B due to the increase in work outside of the right-of-way and existing track bed.

Empire Corridor South

No additional work within Empire Corridor South, other than for Alternative 90A, is proposed, and

there would be no potential for additional impacts to ecological resources in this area for Alternative 110.

Empire Corridor West/Niagara Branch

In areas identified for a dedicated fourth track under Alternative 110 (MPs 174 to 184, 218 to 229, 235 to 239, 249 to 259, 310 to 320, and 388 to 399), there are two records of sensitive natural communities and five records of protected species with a potential for occurrence within a half-mile of the corridor centerline. Within the stretch of tracks identified for a dedicated third track (MP 159 and MP 432) there are an additional 17 species with a potential to occur within a half-mile of the corridor centerline. In addition, Moss Island (a NNL) and Montezuma Marsh (a NNL and bird conservation area), and seven significant natural communities occur within this stretch of tracks. Therefore, construction activities associated with the addition of third and fourth tracks that would result in vegetation clearing or habitat disturbance would have the potential to impact ecological resources.

Of the five stations proposed for upgrades, there is only one record of a sensitive resource within a half-mile of the proposed work areas at the Syracuse station. It would be unlikely that station improvements at this location would result in impacts to sensitive resources unless project designs extend beyond the existing developed lands. There would be 14 locations where realignment of adjoining roadways could result in impacts to ecological resources, but these locations would be better defined in a Tier 2 assessment.

12.2.4 Alternative 125

Ecological resources could be impacted directly by new construction or improvements to existing infrastructure and habitat fragmentation or indirectly through increases in travel speeds and train frequency throughout the Alternative 125 corridor. Impacts would be more likely to occur than with Alternatives 90B, 110, or 90A alone. The total number of protected habitats and sensitive resources identified as having a potential for occurrence within a half-mile of the proposed alignment for Alternative 125 is greater than the other alternatives.

Empire Corridor South

No new improvements, beyond what is proposed for Alternative 90A, would be proposed for Alternative 125 along the majority of Empire Corridor South. However, roughly one mile of the proposed 125 mph track would extend south from Albany-Rensselaer Station to cross the Hudson River. This work would have the potential to impact ecological resources such as aquatic species and Essential Fish Habitat in this portion of the Hudson River with construction of a new river bridge.

Empire Corridor West/Niagara Branch

Alternative 125 would involve construction of a total of 236 miles of track on a new alignment. Installation of the tracks proposed for the new alignment would have the potential to impact terrestrial and aquatic habitats. In addition to the ecological resources that may be impacted by implementation of Alternative 90A, Alternative 125 could affect all of the bird conservation areas, NNLs, sensitive natural communities, and protected species identified in the “Existing Conditions” for the 125 Study Area. The impacts could be through habitat conversion and habitat fragmentation.

13. Critical Environmental Areas State Environmental Quality Review Act

13.1 Existing Conditions

The State Environmental Quality Review Act designate protections for Critical Environmental Areas (CEAs). Within a half-mile of the corridor centerline for both the 90/110 and the 125 Study Areas, there are three CEAs in Westchester County, three in Dutchess County, three in Monroe County and four in Erie County. Section 4.14 of the Tier 1 Final EIS describes these CEAs and their occurrences relative to project alternatives.

13.2 Environmental Consequences

Chapter 4 of the Tier 1 Final EIS addresses and compares the impacts of the Preferred Alternative, Alternative 90B, to those of the other alternatives considered (refer to Section 4.14). The potential effects impacts of the Base Alternative and the other Build Alternatives are described in more detail below.

13.2.1 Base Alternative

The Base Alternative represents the baseline condition against which the alternatives are measured and incorporates improvements that have already been programmed. The Base Alternative will maintain weekday service frequencies. The Tier 1 Draft EIS addressed the potential impacts on CEAs of the eight projects included in the Base Alternative.

13.2.2 Alternative 90A

Proposed construction work for Alternative 90A (MPs 373 to 393) would be within the existing right-of-way and would be unlikely to directly impact these CEAs.

Empire Corridor South

Alternative 90A would include:

- Construction of 1.4 miles of new track, extending under the Tappan Zee Bridge, for the Tarrytown Pocket Track/Interlocking and signal improvements proposed along 43 miles (MPs 32.8 and 75.8). Both of these projects would occur in the vicinity of the “Hudson River” CEA, designated to extend along the entire length of the Hudson River within Westchester County, from approximately MP 14 to MP 45.
- The “County and State Park Lands” CEA includes lands that intersect or run adjacent to the rail right-of-way at MP 17 (Untermeyer Park), MP 26 (Kingsland Point County Park and Devries Park), MP 27 (Peabody Field), MP 28 (Rockwood Hall State Park) and MP 37 (Oscawana County Park), although the only changes at most these locations would be the additional train trips.
- The “Croton Point Park” CEA intersects the rail right-of-way at approximately MP 33.
- Direct impacts would not be anticipated to the “Hudson River” and “County and State Park Lands” CEAs since work would occur primarily within the existing right-of-way and would only extend north from MP 33, and would be unlikely to change the unique character of these CEAs. Along this section, 10 miles of new third track (MPs 53 to 63) and improvements at the Poughkeepsie

Yard/Storage Facility (MPs 71 to 75.8) will not affect CEAs.

- North of Poughkeepsie and south of Albany-Rensselaer Station (MPs 75.8 to 140), proposed improvements in close proximity to CEAs include rock slope stabilization (MPs 105 to 130) and three new control points (CP 82, CP 99, and CP 136). Since work will be confined to the right-of-way, no changes to these CEAs are anticipated.

Empire Corridor West/Niagara Branch

The “Aquifer Overlay Zone” CEA in Schenectady County is designated “to conserve, improve, and protect natural resources.” There would be no proposed construction work for Alternative 90A in this CEA.

With Alternative 90A, track improvements would include approximately 10 miles of third track between MPs 169 and 178.5, and Amsterdam Station improvements along the west end of this segment. Additionally, upgrades to interlockings and automatic block signals at three control points (CP 175, CP 239, and CP 248) are proposed. These improvements would not occur in the vicinity of or impact CEA areas.

In Onondaga County, a CEA is designated by the Town of Camillus as “Portions of Nine Mile Creek” at approximately MP 297. There would be no proposed construction work for Alternative 90A in this CEA.

There are several designated CEAs that are located in the vicinity of proposed improvements and increased train frequency in Monroe County: “Land within 100 feet of the Genesee River, Erie Canal, Lake Ontario or River Gorge except in manufacturing industrial zone,” “Lands with slopes greater than 15 percent,” “Heavily wooded land,” and “Drainage systems designated on official street map.” In addition, proposed improvements under Alternative 90A would occur in the vicinity of an area meeting the City of Rochester CEA definition of “Areas zoned ‘open space’” at the western city limit.

Station improvements at the Buffalo-Depew Station (MPs 429.5 to 432.5) would occur in the general vicinity of three CEAs designated by the Town of Cheektowaga. All three of the Town of Cheektowaga CEAs are no closer than 3,000 feet from the rail right-of-way at MP 433 and are separated from the railroad by urban lands. Although some work outside of the existing right-of-way at MP 433, these CEAs would not likely be impacted due to their distance from the proposed work.

13.2.3 Alternative 110

Empire Corridor South

No additional work is proposed within Empire Corridor South, other than that proposed for Alternative 90A, and additional CEA impacts would not be anticipated.

Empire Corridor West/Niagara Branch

Third and fourth track improvements and increased train frequency would occur in the vicinity of the same CEAs in Schenectady, Onondaga, Monroe and Erie Counties as mentioned in Alternative 90B. The majority of these CEAs would not cross the proposed improvements; however, the program area would pass directly through “Portions of Nine Mile Creek” and “Land within 100 feet of the

Genesee River, Erie Canal, Lake Ontario or River Gorge except in manufacturing industrial zone”. Work in these areas would occur within the existing right-of-way and would be unlikely to impact these CEAs.

13.2.4 Alternative 125

Empire Corridor South

No additional work is proposed within Empire Corridor South, other than that proposed for the Alternative 90A, and additional CEA impacts would not be anticipated.

Empire Corridor West/Niagara Branch

The new Alternative 125 track alignment would fall within the vicinity of the Town of Rotterdam’s “Aquifer Area Overlay Zone” CEA. However, the CEA and proposed track alignment would be approximately a half-mile away from each other and would be separated by urban lands. No impacts to this CEA would be anticipated. All portions of the Alternative 125 track alignment that would not overlap with Alternatives 90A, 90B, and 110 would not be in the vicinity of any designated CEA, and therefore no additional impacts would be anticipated.

14. Historic and Cultural Resources

14.1 Existing Conditions

14.1.1 Archaeology

Historic Context

The Paleo Indian Period (c. 10,500 B.C. - c. 8000 B.C.) represents the earliest known human occupation of the land area that now known as New York. Approximately 14,000 years ago the Wisconsin Glacier retreated from the area leading to the emergence of a cold dry tundra environment. Sea levels were considerably lower than modern levels during this period.⁵ For many years, archaeologists characterized Paleo Indians as “big game hunters;” however, more recent studies have redefined how we think of these early Americans. The recovery of fish scales, charred nutshells and plant and animal remains, has resulted in a changing picture of the Paleoindian diet, settlement, and subsistence patterns suggesting a complex and flexible lifestyle among the earliest Americans. The highly mobile nomadic bands of this period specialized in hunting large game animals such as mammoth, moose-elk, bison, and caribou and gathering plant foods. It has been theorized that the end of the Paleo-Indian Period arose from the failure of over-specialized, big-game hunting (Snow 1980:150-157). Based on evidence from excavated Paleo-Indian sites in the Northeast, there was a preference for high, well-drained areas in the vicinity of streams or wetlands.⁶ Sites have also been found near lithic sources, rock shelters and lower river terraces.⁷

⁵ Boesch, Eugene J. Archaeological Evaluation and Sensitivity Assessment of Staten Island, New York. Prepared for the New York City Landmarks Preservation Commission. 1994.

⁶ Boesch, Eugene J. Archaeological Evaluation and Sensitivity Assessment of Staten Island, New York. Prepared for the New York City Landmarks Preservation Commission. 1994.

⁷ Ritchie, William A. The Archaeology of New York State (Revised Edition). Harrison: Harbor Hill Books. 1980,

During the Archaic Period (c. 8000 B.C. - 1000 B.C.) a major shift occurred in the subsistence and settlement patterns of Native Americans. Archaic period peoples still relied on hunting and gathering for subsistence, but the emphasis shifted from hunting large animal species, which were becoming unavailable, to smaller game and collecting plants in a deciduous forest. The settlement pattern of the Archaic people consisted of small bands that occupied larger and relatively more permanent habitations sites along waterways.⁸ Typically such sites are located on high ground overlooking water courses. This large period has been divided up into four smaller periods, the Early, Middle, Late and Terminal Archaic.

The environment during the Early Archaic (c. 8000 B.C. - 6000 B.C.) displayed a trend toward a milder climate and the gradual emergence of a deciduous-coniferous forest.⁹ The large Pleistocene fauna were gradually replaced by modern species such as elk, moose, bear, beaver, and deer. New species of plant material suitable for human consumption became abundant. The increasing diversification of utilized food sources is further demonstrated by a more complex tool kit, including bifurcated or basally notched projectile points and a wide variety of plant processing equipment such as grinding stones, mortars and pestles. A population increase took place during the Middle Archaic Period (c. 6000 - c. 4000 B.C.), which is characterized by a moister and warmer climate and the emergence of an oak-hickory forest. The settlement pattern during this period displays specialized sites and increasing cultural complexity. The exploitation of the diverse range of animal and plant resources continued with an increasing importance of aquatic resources such as mollusks and fish.¹⁰ In addition to projectile points, grinding stones, mortars, and pestles, are found in Middle Archaic period sites.¹¹ Late Archaic people (c. 4000 - c. 1000 B.C.) were specialized hunter-gatherers who seasonally exploited a variety of upland and lowland settings. As the period progressed, the dwindling melt waters from disappearing glaciers and the reduced flow of streams and rivers promoted the formation of swamps and mudflats, congenial environments for migratory waterfowl, edible plants and shellfish. The new mixed hardwood forests of oak, hickory, chestnut, beech and elm attracted white-tailed deer, wild turkey, moose and beaver. The large herbivores of the Pleistocene were rapidly becoming extinct and the Archaic Indians depended increasingly on smaller game and the plants of the deciduous forest. The tool kit of these peoples included new projectile point types as well as milling equipment, stone axes, and adzes.¹² During the Terminal Archaic Period (c. 1700 B.C. - c. 1000 B.C.), native peoples developed new and radically different broad bladed projectile points (Boesch 1994a).

The Woodland Period (c. 1000 B.C. - 1600 A.D.) is generally divided into Early, Middle and Late Woodland on the basis of cultural materials and settlement-subsistence patterns. The Early Woodland was essentially a continuation of the tool design traditions of the Late Archaic. During this period, clay pottery vessels gradually replaced the soapstone bowls. Cord marked vessels became common during the Middle Woodland Period (c. A.D. 1 to c. 1000 A.D.). The Early and Middle Woodland periods display significant evidence for a change in settlement patterns toward a more sedentary lifestyle. The discovery of large storage pits and larger sites in general has fueled this theory. Some horticulture may have been utilized at this point but not to the extent that it was in the Late Woodland period. In the Late Woodland period (c. 1000 A.D. - 1600 A.D.), triangular projectile

⁸ Boesch, Eugene J. Archaeological Evaluation and Sensitivity Assessment of Staten Island, New York. Prepared for the New York City Landmarks Preservation Commission. 1994.

⁹ Ritchie, William A. and Robert E. Funk, Evidence for Early Archaic Occupation on Staten Island. *Pennsylvania Archaeologist* 31 (3): 45-60. 1971.

¹⁰ Snow, Dean R. *The Archaeology of New England*. Academic Press: New York. 1980.

¹¹ Boesch, Eugene J. Archaeological Evaluation and Sensitivity Assessment of Staten Island, New York. Prepared for the New York City Landmarks Preservation Commission. 1994.

¹² Boesch, Eugene J. Archaeological Evaluation and Sensitivity Assessment of Staten Island, New York. Prepared for the New York City Landmarks Preservation Commission. 1994.

points such as the Levanna and Madison types, were common throughout the Northeast.¹³ Made both of local and non-local stones, these artifacts bear witness to the broad sphere of interaction between groups of native peoples in the Northeast. This period saw the emergence of collared ceramic vessels, many with decorations. Horticulture flourished during this period and with it, the appearance of large, permanent or semi-permanent villages. Plant and processing tools became increasingly common, suggesting an extensive harvesting of wild plant foods. Maize cultivation may have begun as early as 800 years ago. The bow and arrow, replacing the spear and javelin, pottery vessels instead of soap stone ones, and pipe smoking, were all introduced at this time. A semi-sedentary culture, the Woodland Indians moved seasonally between villages within palisaded enclosures and campsites, hunting deer, turkey, raccoon, muskrat, ducks and other game and fishing with dug-out boats, bone hooks, harpoons and nets with pebble sinkers. Their shellfish refuse heaps, called "middens," sometimes reached immense proportions.¹⁴

Methodology

As noted in Section 4.15.2, information concerning the location and character of previously-identified archaeological sites in the direct Areas of Potential Effects (APEs) was collected through a review of the site files of SHPO and NYSM. Section 4.15.3 identifies the number and type of sites in each county in the direct APEs for the 90/110 Study Area and the 125 Study Area. To assist in the Tier 1 analysis, the sites were grouped into various basic site type categories developed in coordination with SHPO. NYSM sites have been divided into point and polygon sites. In general, NYSM polygon sites are mapped as polygons and typically denote sites that were identified less recently and whose boundaries are not clearly defined. NYSM point sites were typically identified more recently.

The previously-identified Native American sites in the direct APEs were grouped into the following site type categories:

- Burial Site/Mound,
- Campsite/Workshop,
- Cave/Rockshelter,
- Habitation/Village Site,
- Midden,
- Other,
- Pictograph/Petroglyph,
- Quarry,
- Stray Find/ Traces of Occupation,
- Trail,
- Unknown.

Historic-period sites types located in the direct APEs were fit into the following broad historic site categories:

- Cemetery/Burial/Funerary,
- Domestic,
- Industrial/Commercial,
- Maritime,
- Transportation/ Infrastructure,
- Other,
- Unspecified/Unknown.

Direct APE: 90/110 Study Area

A total of 166 previously-identified archaeological sites have been identified within the direct APE for the 90/110 Study Area that extends along the Empire Corridor South/West and the Niagara

¹³ Lenik, Edward J. "Cultural Contact and Trade in Prehistoric Staten Island." Proceedings of the Staten Island Institute of Arts and Sciences, vol. 34, no. 1. 1989, 27.

¹⁴ Ritchie, William A. The Archaeology of New York State (Revised Edition). Harrison: Harbor Hill Books. 1980, 80, 267.

Branch (see Exhibit G-22). Of these sites, 47 are SHPO archaeological sites, 117 are NYSM sites (13 point sites and 104 polygon sites), and two are sites identified by the Oneida Nation (Sites 1 and 2). There are a total of 36 burial/habitation sites.

Direct APE: 125 Study Area

A total of 126 previously-identified archaeological sites have been identified within the direct APE for the 125 Study Area that extends along the Empire Corridor South/West and the Niagara Branch. Of these, 27 are SHPO archaeological sites, 96 are NYSM sites (8 point sites and 88 polygon sites), and three are sites identified by the Oneida Nation (Sites 3 through 5). There are a total of 27 burial/habitation sites.

14.1.2 Architectural Resources

Historic Context

The earliest transportation networks in the State of New York consisted of waterways and Native American trails. The Hudson River was a natural highway for the region, and in the 1620s the Dutch established New Amsterdam at its mouth and built Fort Orange at the mouth of its principal tributary, the Mohawk River. Trading posts were defined between these two points and the surrounding area became known as the province of New Netherland. In 1664, New Netherland became the province of New York under British establishment.

Ferries, canals, and railroads have all been important to the development of transportation in New York State. Canals and railroads dominated transportation development in the first half of the 19th century. Efficient transportation was an important means of getting goods to market and a major factor in the value of land in different parts of the state. The Erie Canal, completed in 1825, spurred the westward migration of American settlers, opened the only trade route west of the Appalachians, and secured New York as the preeminent commercial city in the United States.¹⁵ As a result of the increase in trade and traffic, the cities of Albany, Syracuse, Rochester, and Buffalo were formed. During the same period, the first railroad company in New York State, the Mohawk and Hudson, began operation between Albany and Schenectady in 1831.¹⁶ The success of this railroad sparked a rail boom. Money flowed into lines that linked other Erie Canal towns, and within a decade through service was available from Albany to Buffalo.¹⁷ In 1837, the Buffalo & Niagara Falls Railroad also began operations, and the 22-mile stretch became a three-mile journey powered by a wood-stoked steam locomotive. In 1852, the railroad developed tracks west of the Erie Canal, and in December of 1853, the Buffalo & Niagara Falls railroad was leased to the newly founded New York Central Railroad.¹⁸ During the Civil War, the Mississippi River was closed to commercial traffic. As a result, passengers and freight increased on established east-west railroads, such as the Erie and New York Central. The Erie Railroad became the first through line to the Midwest and Great Lakes in 1861, with financial control of lines to Buffalo and Chicago.¹⁹ Following in 1869, Cornelius Vanderbilt, merged the Hudson River Railroad and the New York Central Railroad into the New York Central and Hudson River Railroad.

¹⁵ New York State Canal Corporation. "Unlock the Legend of The New York State Canal System." Pamphlet. 1999.

¹⁶ Ellis, Edward Robb. *The Epic of New York City*. New York: Old Town Books. 1966, 259.

¹⁷ Burrows, Edwin G. and Mike Wallace. *Gotham, A History of New York City to 1898*. New York: Oxford University Press. 1999, 564.

¹⁸ "Buffalo & Niagara Falls Railroad 1834." Website Niagara Frontier.com, accessed August 24, 2011 <<http://www.niagarafrontier.com/railroadhistory.html#B7>>. 2011.

¹⁹ A.G. Lichtenstein & Associates, Inc. "New Jersey Historic Bridge Survey." 1994, 26.

Exhibit G-22—Catalog of Previously Identified Archaeological Sites within the Direct APEs

	SHPO Sites		NYSM Point Sites		NYSM Polygon Sites		Oneida Nation Sites	
	90/110 Study Area	125 Study Area	90/110 Study Area	125 Study Area	90/110 Study Area	125 Study Area	90/110 Study Area	125 Study Area
New York	N (U); H (O); N (M)	N (U); H (O); N (M)			N (H, M); N (M); N (C); N (R)	N (H, M); N (M); N (C); N (R)		
Bronx					N (M)	N (M)		
Westchester			N (R); N (M); 2 N (U)	N (R); N (M); 2 N (U)	2 N (U); 3 N (H, B); 4 N (H); N (B); 3 N (S); N (M); 2 N (C)	2 N (U); 3 N (H, B); 4 N (H); N (B); 3 N (S); N (M); 2 N (C)		
Putnam					N (C); H (U); N (B); N (H); N (S)	N (C); H (U); N (B); N (H); N (S)		
Dutchess	N (C); N (S); H (U); H (I, M)	N (C); N (S); H (U); H (I, M)			4 N (U); 2 N (C); 2 N (C, B); 5 N (H); N (Q); 6 N (S)	4 N (U); 2 N (C); 2 N (C, B); 5 N (H); N (Q); 6 N (S)		
Columbia	N (C); N (R)	N (C); N (R)	N (U)	N (U)	4 N (C); N (H); 2 N (U)	4 N (C); N (H); 2 N (U)		
Rensselaer	H (I); 2 N (C); H (M, I)	H (I); 2 N (C); H (M, I)			N (S)	N (S)		
Albany		H (I)				N (C)		
Schenectady	N (U); X; 2 H (U); N (B)				N (B); 2 N (U); N (S); N (H); N (C)	N (U); N (C)		
Schoharie				N (U)				
Montgomery	4 N (U); 8 X; N (C); 2 H (U); 2 N (P); H (I)	N (S); N (S); H (U)	N (S); 2 N (U); 3 N (H); N (B, H)		N (U); 5 N (H); N (C); N (P); N (B); N (S); 3 N (T)			
Herkimer	X; N (U); H (M)	H (B)			N (H); 4 N (S, T)			
Oneida					3 N (C); N (B)	N (H); N (B); N (C)	Site 1; Site 2	Site 3
Madison		N (C)				2 N (S)		Site 4; Site 5
Onondaga	H (I); H (U)	2 H (D); H (I)		N (S)	N (H); N (C, H); 4 N (S); N (C); N (U)	N (C); 2 N (H); N (C); N (C, H); 4 N (S); N (U)		
Cayuga			N (U)			N (S); N (B)		
Wayne					N (S)	N (S); N (C)		
Monroe					N (B); N (U); N (T, S); N (C); N (S)	N (B); N (U); N (T, S); N (C)		
Genesee	2 N (C, S); N (S); H (D)	N (S)		N (C)	2 N (T)	N (C)		
Erie	N (U); H (F)	N (U); H (F); 2 N (C); N (C, S)			2 N (S); N (T); N (C)	2 N (S); N (T); N (C); N (S)		
Niagara	H (F)	H (F)			N (C); N (H); N (T)	N (C); N (H); N (T)		
TOTALS	47	27	13	8	104	88	2	3

Note: Native American Sites (N): (B) Burial; (C) Camp site/Tool Production/ Workshop; (H) Habitation/Village/Hamlet; (M) Midden; (O) Other; (P) Petroglyph/Pictograph; (Q) Quarry; (R) Rockshelter; (S) Stray Finds/"Traces of Occupation"; (T) Trail; (U) Unspecified/Unknown

Historic-Period Sites (H): (B) Burial/Cemetery; (D) Domestic; (F) Transportation/Infrastructure/Utilities; (I) Industrial or Commercial Deposits; (M) Maritime; (O) Other; (U) Unspecified/Unknown
(X): Unknown whether Precontact or Historic Period

Resources shown in bold indicate archaeological sites located only in the direct APE for new track proposed for the 125 Alternative

Overview of APE

Previously-identified architectural resources located within the direct and indirect APEs for the 90/110 Study Area and the 125 Study Area are summarized in Exhibit 4-20 in Chapter 4 of the Tier 1 Final EIS and Exhibit G-23 respectively. The NHLs, S/NR-listed- and -eligible historic districts are noted in the text below. Detailed tables listing the S/NR-listed and -eligible individual resources are provided in Exhibit G-24, respectively. The approximate locations of these resources are illustrated in Exhibit G-25, Historic and Cultural Maps (3 of 3), and the counties and municipalities within the APE are shown in Exhibit G-26.

Direct APE: 90/110 Study Area

A total of 79 previously-identified architectural resources are located in the direct APE for the 90/110 Study Area that extends along the Empire Corridor South/West and the Niagara Branch. These resources are summarized by county in Exhibit 4-20 in Chapter 4 of the Tier 1 Final EIS. Of the 79 architectural resources, three resources are NHLs: Fort Klock in St. Johnsville, Montgomery County, the Hudson River Historic District in Dutchess and Columbia Counties, and the New York State Barge Canal Historic District. Fort Klock was designated a National Historic Landmark District by the U.S. Secretary of the Interior in 1973. Fort Klock, a fortified stone homestead built in 1750, is part of a 30-acre complex that includes the historic homestead, a renovated Colonial Dutch Barn, blacksmith shop, and 19th century schoolhouse. The Hudson River National Historic Landmark District was designated by the U.S. Secretary of the Interior in 1990. The 32-square-mile district stretches from Germantown in Columbia County to Hyde Park in Dutchess County. It includes over 40 riverfront estates, two villages, four hamlets, and significant designed landscapes and farmlands. The 450-mile New York State Barge Canal National Historic Landmark District includes four branches of the canal system (Erie, Champlain, Oswego, and Cayuga-Seneca) and encompasses 552 contributing structures. It includes the Erie Canal in the study area and canalized river sections (Tonawanda Creek, Mohawk, and Hudson Rivers).

Seventy-six other S/NR-listed or eligible resources are within the direct APE. Of these, 61 are individual properties, while 15 are historic districts. The individual properties are identified in Exhibit G-24. The 15 historic districts include:

- **Westchester County (1 total)**
 - the Lord Burnham Factory Complex - contains two historic resources.
- **Putnam County (2 total)**
 - Cold Spring Historic District - comprised of 208 contributing buildings and 11 noncontributing buildings, the earliest of which dates from 1780. The majority of the buildings in the district date from the mid-19th century.
 - Garrison Landing Historic District - the 53-acre district contains 15 buildings and one structure consisting mainly of a small commercial and residential area located between what is now the Metro-North Hudson Line and the Hudson River in Garrison, New York. Its buildings were mostly erected in the 1850s, around the time the Hudson River Railroad, later the New York Central, laid the tracks.
- **Dutchess County (2 total)**

- Stone Street Historic District - composed of a one-acre site containing four houses constructed in the mid-19th century in the vernacular Greek Revival and Second Empire styles.
- Wheeler Hill Historic District – composed of 49 contributing buildings, 15 contributing sites, and four contributing structures, and encompasses the estates of Obercreek, Elmhurst, Edge Hill, Henry Suydam, William Crosby, and Carnwarth Farms that were developed between 1740 and 1940.
- **Columbia County (2 total)**
 - Clermont Estates Historic District - composed of 44 contributing buildings, was subsumed into the Hudson River National Historic Landmark District in 1990.
 - Hudson Historic District - consists of 756 contributing properties in a 139-acre area stretching from the Hudson River to the town of Hudson's eastern boundary.
- **Rensselaer County (1 total)**
 - Schodack Landing Historic District - consists of 86 contributing buildings located in the hamlet of Schodack Landing and includes a variety of buildings dated from the 18th through early 20th centuries.
- **Albany County (1 total)**
 - Broadway-Livingston Avenue Historic District - consists of 20 contributing buildings, including a collection of two-and three-story rowhouses built 1829-1876 and a railroad bridge built in 1900.
- **Schenectady County (1 total)**
 - Stockade Historic District - district is located in the northwest corner of Schenectady on the banks of the Mohawk River, and contains a variety of Dutch and English 17th and 18th century buildings.
- **Montgomery County (1 total)**
 - Nelliston Historic District – consists of 56 contributing buildings on three residential streets developed between 1860 and 1890 and a 1902 railroad station.
- **Herkimer County (1 total)**
 - Little Falls Historic District - contains 10 historic resources.
- **Monroe County (1 total)**
 - Brown's Race Historic District - located in Rochester along the Genesee River, the district contains 15 contributing buildings, 2 contributing structures, and 14 contributing sites in a primarily 19th century industrial complex.
- **Genesee County (1 total)**
 - Lake Street Historic District - located in Bergen, the district contains several of Romanesque Revival buildings from the last decades of the late 19th and early 20th centuries.
- **Erie County (1 total)**
 - Seneca Industrial Center - contains seven historic resources.

At least eleven S/NR-listed or eligible resources directly associated with the railroad are located in the direct APE. These include the Bear Mountain Bridge and Toll House and Scarborough Railroad Station in Westchester County; the Croton North Railroad Station and the Philipse Manor Railroad Station in Westchester County; the Poughkeepsie Railroad Station and Hyde Park Railroad Station and the Metro-North Railroad Bridge (BIN 5524010) in Dutchess County; the Stuyvesant Railroad Station in Columbia County; the Livingston Avenue Bridge in Rensselaer County; the Oriskany Railroad Station in Oneida County, and the New York Central Terminal in Buffalo, Erie County.

It should be noted that approximately 350 bridges meeting the 50-year age criterion for S/NR eligibility are located within the existing railroad alignment and thus within the direct APE. Any bridges 50 years old or older to be modified may also be evaluated for potential S/NR eligibility as part of the Tier 2 analysis. In order to evaluate the significance of these bridges, an architectural historian would conduct a field visit and would perform documentary research. The New York State Department of Transportation's Contextual Study of New York State's pre-1961 Bridges (November 1999), Evaluation of National Register Eligibility (January 2002), and Historic Bridge Management Plan (September 2002), would be consulted among other documentary sources.

Direct APE: 125 Study Area

A total of 60 previously-identified architectural resources are located in the direct APE for the 125 Study Area that extends along the Empire Corridor South/West and the Niagara Branch. These resources are summarized by county in Exhibit 4-20 in Chapter 4 of the Tier 1 Final EIS. Of the 60, two are NHLs: the Hudson River Historic District in Dutchess and Columbia counties and the New York State Barge Canal Historic District (described above).

Of the remaining 58 are S/NR-listed or eligible resources within the direct APE, 48 are individual properties and ten are historic districts. The 48 individual properties are identified in Exhibit G-24. Three individually-listed S/NR resources are located within the portion of the direct APE where new track is proposed for this alternative. These include: the Robert Liddle Farmhouse (MP 167) in Schenectady County; the Deferriere House (MP 253) in Madison County; and the Warren Hull House (MP 411) located in Erie County. The ten historic districts include: Lord Burnham Factory Complex; Cold Spring Historic District; Garrison Landing Historic District; Stone Street Historic District; Wheeler Hill Historic District; Clermont Estates Historic District; Hudson Historic District; Schodack Landing Historic District; Brown's Race Historic District; and the Seneca Industrial Center (described above). There are no S/NR-listed or eligible historic districts located in the portion of the direct APE where new track is proposed.

Indirect APE: 90/110 Study Area

A total of 356 previously-identified architectural resources are located in the indirect APE for the 90/110 Study Area that extends along the Empire Corridor South/West and the Niagara Branch. These resources are summarized in Exhibit G-23. Of the 356 architectural resources, five are NHLs. These include the two NHLs described above, the General Electric Research Laboratory in Schenectady County, and Sunnyside in Westchester County. The General Electric Research Laboratory is the first industrial lab research facility established in 1900. Sunnyside, formerly the home of noted early American author Washington Irving, is a historic house set on 10 acres alongside the Hudson River in Tarrytown.

Of the remaining S/NR-listed or eligible architectural resources within the indirect APE for the

90/110 Study Area, 305 are individual properties and 46 are historic districts. The individual resources are identified in Exhibit G-24. The 46 historic districts in the indirect APE include the 15 districts within the direct APE (described above) and the additional 31 described below:

- **New York County (7 total)**
 - Riverside Drive – West 80th-81st Streets Historic District - contains 32 rowhouses and town houses of the 1890s and three turn-of-the-century tenements, exhibiting a variety of architectural influences, and one later neo-Classical style apartment building of the 1920s.
 - Riverside Drive – West 105th Street Historic District - district is an L-shaped area extending along one block of West 105th Street, Riverside Drive and a part of the south side of West 106th Street, comprising 30 buildings on a block and a half.
 - Broadway-Riverside Drive Historic District (contains one resource).
 - Riverside Drive–West 135th-136th Streets Historic District (contains five resources).
 - Riverside–West End Historic District (contains 30 resources).
 - Upper Broadway Historic District (contains one resource).
 - West End Collegiate Historic District (contains 21 resources)
- **Westchester County (2 total)**
 - Scarborough Historic District - district contains 26 contributing buildings, two contributing sites, and one contributing structure. They are associated with three estates, a school complex, a cemetery, and two religious properties.
 - Anaconda Wire & Cable Company (contains three resources).
- **Dutchess County (3 total)**
 - Mill Street-North Clover Street Historic District - district is 27 acres in size, located between downtown Poughkeepsie and the Hudson River. Contains approximately 139 historic buildings dating primarily to the mid-19th century.
 - Union Street Historic District - district is an eight-block area located southwest of downtown Poughkeepsie dating to the late-18th century.
 - Main Street Historic District - the district, composed of six contributing structures including three houses and three commercial buildings, is located just west of the train station. The six buildings located on a single acre are an intact remnant of the hamlet as it developed in the mid-19th century, prior to the Hudson River Railroad's construction, which cut it in half.
- **Albany County (1 total)**
 - Clinton Avenue Historic District - the district is a 70-acre site in Albany composed of approximately 600 contributing buildings consisting primarily of 19th-century row houses in a variety of architectural styles.
- **Schenectady County (1 total)**
 - Union Street Historic District - the 65-acre district area includes 184 buildings built over the course of the 19th century.
- **Montgomery County (2 total)**
 - Amsterdam East Main Street Historic District (contains nine resources); and
 - Fonda Fairgrounds & Speedway Historic District (contains two resources).
- **Oneida County (1 total)**

- Lower Genesee Street Historic District - located in Utica, the district contains 45 contributing buildings dating from 1830 to 1929 north of the city center.
- Madison County (**1 total**)
 - South Peterboro Street Commercial Historic District - The district, located in Canastota, contains 20 contributing primarily two and three-story brick buildings built between 1870 and 1930.
- Onondaga County (**1 total**)
 - New York State Fairgrounds Historic District (contains one resource).
- Wayne County (**1 total**)
 - Village of Clyde Historic District (contains eight resources).
- Monroe County (**8 total**)
 - Bridge Square Historic District - district contains 24 contributing buildings that consist primarily of two-, three-, and four-story brick masonry commercial and industrial buildings dating from 1826 to 1928.
 - East Avenue Historic District - the district, located in Rochester, consists of approximately 700 buildings dating from the 19th and early 20th centuries.
 - Madison Square-West Main Street Historic District - located in Rochester, the district consists of 102 contributing structures and two contributing sites. 65 of the contributing structures are residential, with three contributing dependencies. Also in the district are 24 contributing commercial buildings and nine industrial buildings.
 - St. Paul-North Water Streets Historic District - district consists of a relatively intact cluster of 17 commercial, manufacturing, and warehouse structures in Rochester.
 - State Street Historic District - district consists of the last surviving continuous row of 19th century masonry commercial buildings within Rochester's Inner Loop. They were developed between 1825 and 1900 and the row forms an unpretentious unbroken wall of 12 buildings.
 - Birch Crescent Historic District (contains 12 resources).
 - Prince Alexander Historic District (contains 12 resources).
 - Public Market Historic District (contains ten resources).
- Genesee County (**1 total**)
 - Village of Bergen Historic District (contains five resources).
- Erie County (**2 total**)
 - Joseph Ellicott Downtown Historic District (contains one resource).
 - Wende Correctional Facility Historic District (contains one resource).

At least sixteen S/NR-listed or eligible resources directly associated with the railroad are located within the indirect APE. These include the eleven resources within the direct APE (described above) and the Andrews Street Bridge in Rochester, Monroe County; the Yonkers Railroad Station and the Tarrytown Railroad Station in Westchester County; the Mid-Hudson Bridge in Dutchess County; and the Rip Van Winkle Bridge in Columbia County.

Exhibit G-23—Historic Architectural Resources within the Indirect APEs

County	NHL		S/NR-Listed/Eligible Resources - Individual		S/NR-Listed/Eligible Resources - Districts		Total Resources	
	90/110	125	90/110	125	90/110	125	90/110	125
New York			62	62	7	7	69	69
Bronx			4	4			4	4
Westchester	1	1	36	36	3	3	40	40
Putnam			5	5	2	2	7	7
Dutchess			31	31	5	5	36	36
Columbia			7	7	2	2	9	9
Greene							0	0
Rensselaer			32	13	1	1	33	14
Albany			6	2	2		8	2
Schenectady	1		4	3	2	1	7	4
Montgomery	1		50		3		54	0
Herkimer			17		1		18	0
Oneida			8		1		9	0
Madison			6	1	1		7	1
Onondaga			1	1	1	1	2	2
Cayuga							0	0
Wayne			1		1		2	0
Monroe			20	19	9	9	29	28
Genesee			1		2		3	0
Erie			8	9	3	2	11	11
Niagara			6	6			6	6
Multiple Counties	2	2					2	2
TOTALS	5	3	305	199	46	32	356	235
Note: Counties are listed from south to north, then east to west. Resources that fall within the direct APE are also within the boundaries of the indirect APE. The 90/110 Study Area is used for analysis of Alternatives 90A, 90B, and 110 and consists of the existing 464-mile long Empire Corridor alignment. The 125 Study Area is used for analysis of Alternative 125 and consists of portions of the existing Empire Corridor and new alignment and is 450 miles long.								

Indirect APE: 125 Study Area

A total of 235 previously-identified architectural resources are located in the indirect APE for the 125 Study Area that extends along the Empire Corridor South/West and the Niagara Branch. These resources are summarized by county in Exhibit G-23. Of the 235 resources, three are NHLs, including the Hudson River Historic District in Dutchess and Columbia counties; Sunnyside, located in Westchester County, and the New York State Barge Canal Historic District (described above).

Of the 235 S/NR-listed or eligible resources within the indirect APE, 199 are individual properties

and 32 are historic districts. The individually listed or eligible resources are identified in Exhibit G-24. Five individually-listed or eligible S/NR resources are located within the portion of the indirect APE where new track is proposed for this alternative. These are: Nut Grove (MP 144) and 924 New Scotland Road (MP 147) in Albany County; the Reformed Presbyterian Church Parsonage (MP 169); and U.S. 20 between Knight and Mudge Roads (MP 170.5) and the Halladay House (MP 172) in Schenectady County. The 32 historic districts include the ten districts within the direct APE (described above) and the following additional 11 S/NR listed districts: Riverside Drive – West 80th-81st Streets Historic District; Riverside Drive – West 105th Street Historic District; Mill Street-North Clover Street Historic District; Union Street Historic District; Main Street Historic District; Bridge Square Historic District; East Avenue Historic District; Madison Square-West Main Street Historic District; St. Paul-North Water Streets Historic District; State Street Historic District (described above). There are no S/NR-listed or eligible historic districts located in the portion of the indirect APE where new track is proposed.

Exhibit G-24—S/NR-Listed Individual or Eligible Resources within the APEs

Name	Location	County	90/110 Study Area	125 Study Area
<i>Direct APE</i>				
Chapel of the Intercession Complex and Trinity Cemetery	550 W. 155th St.	New York	X	X
Chatsworth Apartments and Annex	340-346 West 72nd Street	New York	X	X
Riverside Park and Drive	From 72nd St. to 129th St.	New York	X	X
U.S. General Post Office	8th Ave. between 31st and 33rd Sts.	New York	X	X
Former NY Central Railroad Substation No. 11	2350-236 Twelfth Avenue	New York	X	X
Lincoln Tunnel	(Route 495)	New York	X	X
Present Centro Maria	539 West 54th Street	New York	X	X
Fonthill Castle and Administration Building of the College of Mount St. Vincent	W. 261st St. and Riverdale Ave.	Bronx	X	X
Bear Mountain Bridge and Toll House	NY 6/202	Westchester	X	X
Brandreth Pill Factory	Water St.	Westchester	X	X
Croton North Railroad Station	Senasqua Rd.	Westchester	X	X
Lord and Burnham Building	2 Main Street	Westchester	X	X
Lyndhurst	635 S. Broadway	Westchester	X	X
Peekskill Freight Depot	41 South Water Street	Westchester	X	X
Philipse Manor Railroad Station	Jct. of Riverside Dr. and Millard	Westchester	X	X
Standard House	50 Hudson Avenue	Westchester	X	X
Sunnyside	Sunnyside Lane	Westchester	X	X
Trevor, John Bond, House	511 Warburton Ave.	Westchester	X	X

Exhibit G-24—S/NR-Listed Individual or Eligible Resources within the APEs

Name	Location	County	90/110 Study Area	125 Study Area
Yonkers Trolley Barn	92 Main Street	Westchester	X	X
	21 Alexander Street	Westchester	X	X
Dobbs Ferry Railroad Station-	Hudson Line-Station Plaza	Westchester	X	X
Scarborough Railroad Station	Hudson Line	Westchester	X	X
Eagle's Rest	NY 9-D	Putnam	X	X
U.S. Military Academy	NY 218	Putnam	X	X
West Point Foundry	Foundry Cove between NY 90 and NY Central RR tracks	Putnam	X	X
Capt. Moses W. Collyer House	River Rd. S.	Dutchess	X	X
Cornelius Carman House	River Rd. S.	Dutchess	X	X
Home of Franklin D. Roosevelt National Historic Site	2 mi. S of Hyde Park on U.S. 9	Dutchess	X	X
Hyde Park Railroad Station	River Rd.	Dutchess	X	X
Innis Dye Works, Poughkeepsie MRA	80 North Water Street	Dutchess	X	X
Mount Gulian	N of Beacon off I-84	Dutchess	X	X
National Biscuit Company Carton- Making and Printing Plant	Beekman Street	Dutchess	X	X
Poughkeepsie Railroad Bridge	Spans Hudson River	Dutchess	X	X
Poughkeepsie Railroad Station	Main St.	Dutchess	X	X
Rhinecliff Hotel	Schatzell Ave.	Dutchess	X	X
Roosevelt Point Cottage and Boathouse	River Point Rd. at the Hudson River	Dutchess	X	X
Vanderbilt Mansion National Historic Site	N edge of Hyde Park, U.S. 9	Dutchess	X	X
Metro-North Railroad Bridge BIN5524010	Dennings Avenue Extension	Dutchess	X	X
Oak Hill	N of Linlithgo on Oak Hill Rd.	Columbia	X	X
Stuyvesant Railroad Station	Riverview Street	Columbia	X	X
Joachim Staats House and Gerrit Staats Ruin	N of Castleton-on-Hudson	Rensselaer	X	X
Prinns Insurance/Old I.O.O.F	56 South Main Street	Rensselaer	X	X
Livingston Avenue Bridge	Hudson River crossing	Rensselaer	X	
BIN 77090212 Railroad Bridge		Albany	X	
BIN 7092900 Railroad Bridge		Albany	X	
Robert Liddle Farmhouse	Little Dale Farm Road	Schenectady		X
Fort Klock	2 mi. E of St. Johnsville on NY 5	Montgomery	X	
Guy Park	W. Main St.	Montgomery	X	
Montgomery County Farm (Montgomery County Buildings Thematic Group)	NY 5	Montgomery	X	
Palatine Bridge Freight House	E of Palatine Bridge on NY 5	Montgomery	X	
Cut Limestone Retaining Wall and Bridge Abutment	NY 10	Montgomery	X	
Hexagonal Limestone Well Shelter	NY 5	Montgomery	X	
H.D.F. Veeder House	3642 NY 5	Montgomery	X	
West Main Street	North Side-20 Miles North of Ann Street	Montgomery	X	
West Main Street	Culvert-Dove Creek Under Railroad	Montgomery	X	
Gilbert Knitting Mill	151 Elizabeth Street	Herkimer	X	
Union Station	Main St. between John and 1st Sts.	Oneida	X	
Oriskany Railroad Station	River Street; West Side	Oneida	X	
Deferriere House	2089 Genesee St.	Madison		X

Exhibit G-24—S/NR-Listed Individual or Eligible Resources within the APEs

Name	Location	County	90/110 Study Area	125 Study Area
Coldwater Station		Monroe	X	
	60 South Main Street	Monroe	X	X
New York Central Terminal	495 Paderewski Dr.	Erie	X	X
Warren Hull House	5976 Genesee St.	Erie		X
U.S. Customhouse	2245 Whirlpool St.	Niagara	X	X
Indirect APE				
69th Street Transfer Bridge	West 69th Street at Hudson River	New York	X	X
Delta Psi, Alpha Chapter	434 Riverside Drive	New York	X	X
Fort Tryon Park and the Cloisters	Broadway and Dyckman St.	New York	X	X
General Grant National Memorial	Riverside Dr. and W. 122nd St.	New York	X	X
Isaac L. Rice Mansion	346 W. 89th St.	New York	X	X
Jeffrey's Hook Lighthouse	Fort Washington Park	New York	X	X
Red House	350 W. 85th St.	New York	X	X
Schinasi House	351 Riverside Dr.	New York	X	X
St. Walburgas Academy	630 Riverside Drive	New York	X	X
Townhouses at 352 and 353 Riverside Drive	352-353 Riverside Drive	New York	X	X
Union Theological Seminary	W. 120th St. and Broadway	New York	X	X
	125 Riverside Drive	New York	X	X
	352 Riverside Drive	New York	X	X
	353 Riverside Drive	New York	X	X
	247 West 30th Street	New York	X	X
	259-261 West 30th Street	New York	X	X
	236-248 West 31st Street	New York	X	X
	406-426 West 31st Street	New York	X	X
	424 West 33rd Street	New York	X	X
	500 West 37th Street	New York	X	X
Cheyenne Diner	411 Ninth Avenue	New York	X	X
Fairmont Building	239-241 West 30th Street	New York	X	X
Former 53rd Street Industrial School	552 West 53rd Street	New York	X	X
Former Franco-American Baking Company	509-517 West 38th Street	New York	X	X
Former French Hospital	326-330 West 30th Street	New York	X	X
Former Gledhill Wall Paper Company	541-545 West 34th Street	New York	X	X
Former Hess Brothers Confectionary Factory	502-504 West 30th Street	New York	X	X
Former Lee Brothers Storage Building	571 Riverside Drive	New York	X	X
Former New York Public Library West 40th Street Branch	457 West 40th Street	New York	X	X
Former Pinehill Crystal Water Company	500-504 West 36th Street	New York	X	X
Former Sheffield Farms Dairy	632 West 125th Street	New York	X	X
Fur Craft Building	242-246 West 30th Street	New York	X	X
George Washington Bridge		New York	X	X
Glad Tidings Tabernacle	325-329 West 33rd Street	New York	X	X
High Line	Tenth Avenue	New York	X	X
High School of Printing (now Graphic Communication Arts H.S.)	439 West 49th Street	New York	X	X
Hill Building	469-475 Tenth Avenue	New York	X	X
Houbigant Company Warehouse	539 West 45th Street	New York	X	X

Exhibit G-24—S/NR-Listed Individual or Eligible Resources within the APEs

Name	Location	County	90/110 Study Area	125 Study Area
Interborough Rapid Transit Company Power House/Con Ed	857 Eleventh Avenue	New York	X	X
Kleeberg Residence	3 Riverside Drive	New York	X	X
Master Printers Building	406-416 Tenth Avenue	New York	X	X
Model Tenements, Ernest Flagg	500-506 West 42nd Street	New York	X	X
New York Improvement & Tunnel Extension of the Pennsylvania Railroad	beneath Hudson River	New York	X	X
P.S. 51	520 West 45th Street	New York	X	X
P.S. 111	440 West 53rd Street	New York	X	X
River Diner	452 Eleventh Avenue	New York	X	X
Riverside Church	490-498 Riverside Drive	New York	X	X
Riverside Drive Viaduct		New York	X	X
Riverside Park and Riverside Drive	North End	New York	X	X
St. Michael's Roman Catholic Church	414-424 West 34th Street	New York	X	X
St. Raphael Roman Catholic Church and Rectory	502-504 West 41st Street	New York	X	X
US Post Office	341 Ninth Avenue	New York	X	X
West 59th Street Recreation Center/West 60th Street Public Bath	533 West 59th Street	New York	X	X
West Market Diner	659 West 131st Street	New York	X	X
William F. Sloan Memorial YMCA	360 West 34th Street	New York	X	X
Colgate, Robert, House	5225 Sycamore Ave.	Bronx	X	X
Dodge, William E., House	690 W. 247th St.	Bronx	X	X
Wave Hill	675 W. 252nd St.	Bronx	X	X
Bear Mountain Bridge Rd.	NY 6/202, between Bear Mt. Bridge	Westchester	X	X
Hyatt-Livingston House	152 Broadway	Westchester	X	X
Nuits	Hudson Rd. and Clifton Pl.	Westchester	X	X
Old Croton Aqueduct	N from Yonkers to New Croton Dam	Westchester	X	X
Untermeyer Park	Warburton Ave. and N. Broadway S. of Jct. with Odell Ave.	Westchester	X	X
US Post Office—Yonkers	79--81 Main St.	Westchester	X	X
	24 Alexander Street	Westchester	X	X
	104 Buena Vista Avenue	Westchester	X	X
	108 Buena Vista Avenue	Westchester	X	X
	116 Buena Vista Avenue	Westchester	X	X
	152-154 Buena Vista Avenue	Westchester	X	X
	155-157 Buena Vista Avenue	Westchester	X	X
	168-170 Buena Vista Avenue	Westchester	X	X
	192 Buena Vista Avenue	Westchester	X	X
Municipal Building & Library	7 Maple Avenue	Westchester	X	X
North Yonkers Pumping Station	11 Alexander Street	Westchester	X	X
Purusco Residence	22 Cottage Street	Westchester	X	X
Riverside Hose Company	Franklin Street	Westchester	X	X
Symond's School/Snowden Court		Westchester	X	X
Tarrytown Railroad Station	Depot Square	Westchester	X	X
Yonkers Canoe Club	Alexander Street	Westchester	X	X
Yonkers Railroad Station-Hudson Line	Buena Vista Avenue	Westchester	X	X
Rock Lawn and Carriage House	NY 9-D	Putnam	X	X

Exhibit G-24—S/NR-Listed Individual or Eligible Resources within the APEs

Name	Location	County	90/110 Study Area	125 Study Area
Wilson House	Lower Station Rd.	Putnam	X	X
Abraham Brower House	2 Water St.	Dutchess	X	X
Adolph Brower House	1 Water St.	Dutchess	X	X
Bannerman's Island Arsenal	Pollepel Island, off NY 9-D	Dutchess	X	X
Chelsea Grammar School	Liberty St.	Dutchess	X	X
Church of the Holy Comforter	13 Davies St.	Dutchess	X	X
Free Church Parsonage	Jct. of William and Grinnell Sts.	Dutchess	X	X
Hoffman House, Poughkeepsie MRA	North Water Street	Dutchess	X	X
Morton Memorial Library	Kelly St.	Dutchess	X	X
O'Brien General Store and Post Office	Jct. of Schatzell Ave. and Charles St.	Dutchess	X	X
Old St. Peter's Roman Catholic Church and Rectory, Poughkeepsie MRA	97 Mill Street	Dutchess	X	X
Pelton Mill	110 Mill St.	Dutchess	X	X
Riverside Methodist Church and Parsonage	Charles and Orchard Sts.	Dutchess	X	X
Shay's Warehouse and Stable	Rear of 32 Point St.	Dutchess	X	X
William Shay Double House	18 Point St.	Dutchess	X	X
Zion Memorial Chapel	37 Point St.	Dutchess	X	X
Cornell Boathouse		Dutchess	X	X
Johnson Plumbing Complex	35 Main Street	Dutchess	X	X
Mid-Hudson Bridge	US 44	Dutchess	X	X
Clermont	Clermont State Park	Columbia	X	X
Requa House	Ridge Rd	Columbia	X	X
Wiswall, Oliver, House	W of Hudson	Columbia	X	X
Hudson and Boston Railroad Shop	Water Street	Columbia	X	X
Rip Van Winkle Bridge	US 23	Columbia	X	X
	472 Broadway	Rensselaer	X	
	487-483 Broadway	Rensselaer	X	
	908 Broadway	Rensselaer	X	
	920 Broadway	Rensselaer	X	
	926 Broadway	Rensselaer	X	
	927 Broadway	Rensselaer	X	
	941 Broadway	Rensselaer	X	
	943 Broadway	Rensselaer	X	
	1019 Broadway	Rensselaer	X	
	404 East Street	Rensselaer	X	X
	550 East Street	Rensselaer	X	X
	134 South Main Street	Rensselaer	X	X
A. Harder House/ National Bank	11 South Main Street	Rensselaer	X	X
Hans Van Buren House	99 South Main Street	Rensselaer	X	X
Harder/Culver Residence	58 North Main Street	Rensselaer	X	X
Hogeboom/Price Residence	42 North Main Street	Rensselaer	X	X
Isaac V. Schermerhorn House (Cooper Residence)	40 North Main Street	Rensselaer	X	
Marra Residence	47 South Main Street	Rensselaer	X	X
Rensselaer City Library (former Rensselaer County Bank)	810 Broadway	Rensselaer	X	
Village Hall & Library	85 South Main Street	Rensselaer	X	X
Buildings at 744, 746, 748, 750 Broadway	744-750 Broadway	Albany	X	
Church of the Holy Innocents	275 N. Pearl St.	Albany	X	

Exhibit G-24—S/NR-Listed Individual or Eligible Resources within the APEs

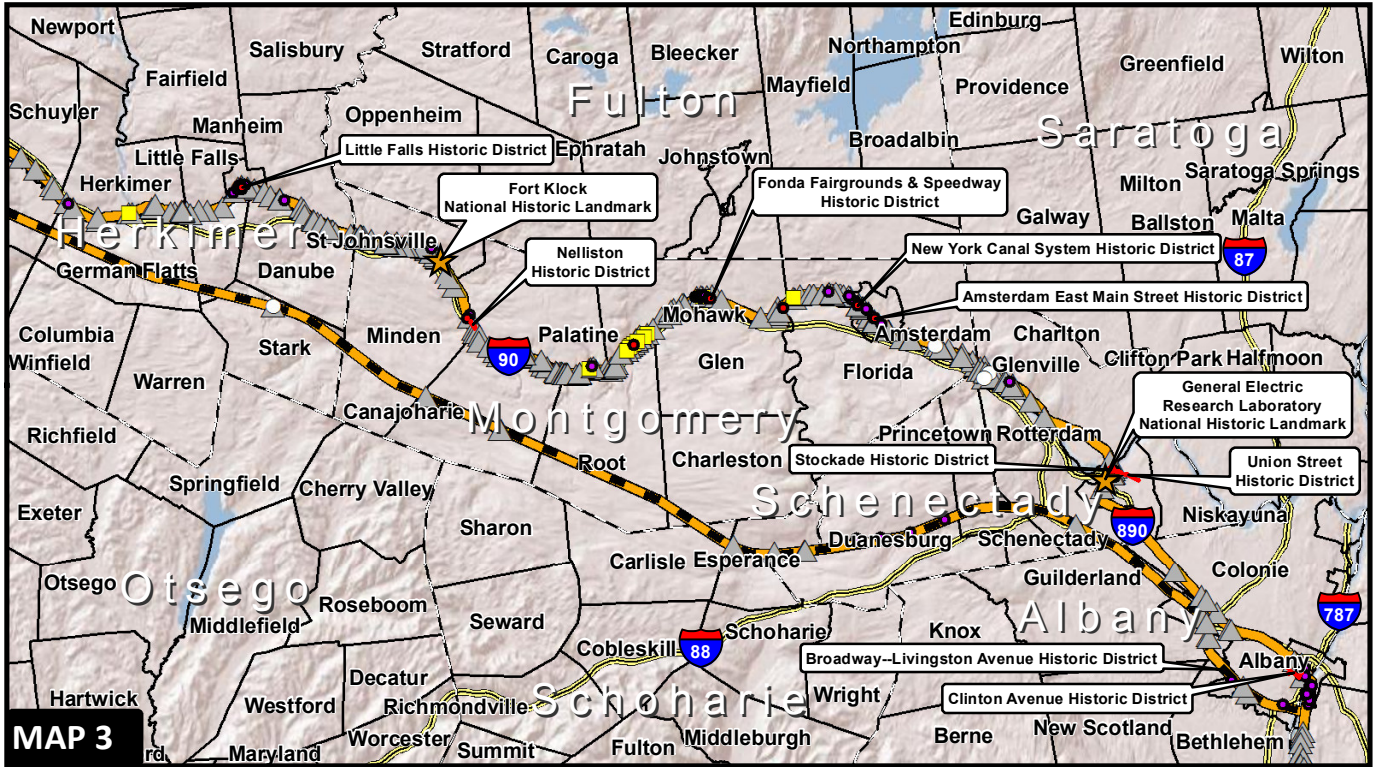
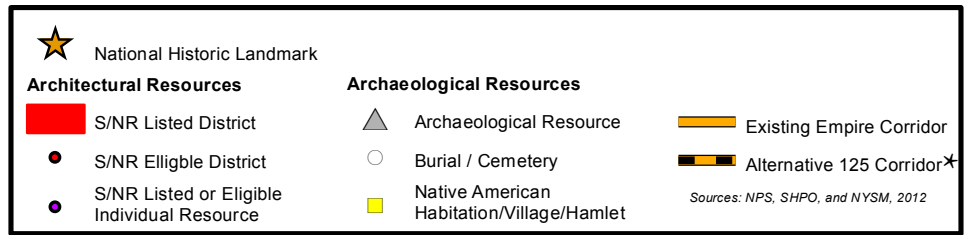
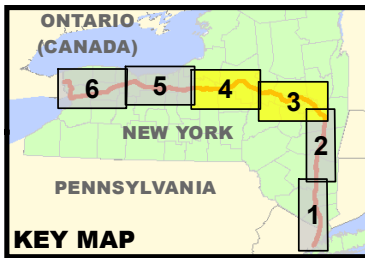
Name	Location	County	90/110 Study Area	125 Study Area
Lil's Diner	893 Broadway	Albany	X	
Nut Grove	McCarty Avenue	Albany		X
	924 New Scotland Road	Albany		X
Central Fire Station	Erie Blvd.	Schenectady	X	
F.F. Proctor Theatre and Arcade	432 State St.	Schenectady	X	
General Electric Research Laboratory	General Electric main plant	Schenectady	X	
Hallady Farmhouse	US 20	Schenectady		X
Reformed Presbyterian Church Parsonage	Duanesburg Churches Road	Schenectady		X
Swart House and Tavern	120 Johnson Road	Schenectady	X	
	U.S. Route 20 between Knight and Mudge Roads	Schenectady		X
Fort Johnson	Jct. of NY 5 and 67	Montgomery	X	
Frey House	West Grand Street (NY 5)	Montgomery	X	
Nellis Tavern	SR 5	Montgomery	X	
New Courthouse, Montgomery County Buildings Thematic Group		Montgomery	X	
Walrath-Van Horne House	West Main Street	Montgomery	X	
Webster Wagner House	E. Grand St.	Montgomery	X	
	1 Cayadutta Street	Montgomery	X	
	29 East Main Street	Montgomery	X	
	31 East Main Street	Montgomery	X	
	6-8 Voorhees Street	Montgomery	X	
	4 West Main Street	Montgomery	X	
	399 West Main Street	Montgomery	X	
	401 West Main Street	Montgomery	X	
A. Doxtader House	46 West Main Street	Montgomery	X	
Barbara's Restaurant	12 West Main Street	Montgomery	X	
Brunswick Hotel	30 West Main Street	Montgomery	X	
Catholic Church (American Legion Hall)	37 East Main Street	Montgomery	X	
Delaurandis Block	40 West Main Street	Montgomery	X	
Fonda House	56 West Main Street	Montgomery	X	
Fonda Methodist Church	42 West Main Street	Montgomery	X	
Guy Park Manor	366 West Main Street	Montgomery	X	
Jansen Building	14-16 West Main Street	Montgomery	X	
Johnson House	6 West Main Street	Montgomery	X	
Judy Larman Dance Studio	25 East Main Street	Montgomery	X	
Mancini Barber Shop	32 West Main Street	Montgomery	X	
Mazes Hotel	18 West Main Street	Montgomery	X	
Mitchell Commercial	10 West Main Street	Montgomery	X	
Mohawk River Bank	34 West Main Street	Montgomery	X	
Mohawk Valley Democrat	2 East Main Street	Montgomery	X	
Nelson & Reese House, w/cemetery & barn foundations	7573 State Route 5	Montgomery	X	
Peeler Apartments	8 West Main Street	Montgomery	X	
Princeton Industries	4 East Main Street	Montgomery	X	
Stearns Residence	19 East Main Street	Montgomery	X	
Stearns Residence	23 East Main Street	Montgomery	X	
Voorhees Residence	9 East Main Street	Montgomery	X	
Voorhees Residence	11 East Main Street	Montgomery	X	
Vunk Apartments	3 East Main Street	Montgomery	X	
World War I Memorial	West Main Street	Montgomery	X	

Exhibit G-24—S/NR-Listed Individual or Eligible Resources within the APEs

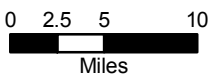
Name	Location	County	90/110 Study Area	125 Study Area
Wyman's Drug Store	26 West Main Street (Auto Parts)	Montgomery	X	
Wyman's Drug Store	22 West Main Street (Jeannette's) 27 East Main Street	Montgomery	X	
Zion Episcopal Church		Montgomery	X	
Herkimer County Trust Company Building	Corner of Ann and Albany Sts.	Herkimer	X	
Herkimer House	Near NY 5 S.	Herkimer	X	
Palatine German Frame House (Wilder House)	4217 NY 5	Herkimer	X	
US Post Office-Little Falls	25 W. Main St.	Herkimer	X	
	591 East John Street	Herkimer	X	
	401 South Ann Street	Herkimer	X	
	403 South Ann Street	Herkimer	X	
	407 South Ann Street	Herkimer	X	
	48-54 West Main Street	Herkimer	X	
	338 West Main Street	Herkimer	X	
	56 West Mill Street	Herkimer	X	
Fleet Bank	West Main Street	Herkimer	X	
Little Planing Mill	55 West Mill Street	Herkimer	X	
Ligneous Paper Mill	25 West Mill Street	Herkimer	X	
McKinnon Warehouse	24 West Mill Street	Herkimer	X	
Snyder Apartments	West Main Street	Herkimer	X	
Byington Mill (Frisbie & Stansfield Knitting Company)	421--423 Broad St.	Oneida	X	
Doyle Hardware Building	330--334 Main St.	Oneida	X	
Hieber, John C. & Co., Building	311 Main Street	Oneida	X	
Hurd & Fitzgerald Building	400 Main St.	Oneida	X	
Utica Daily Press Building	310--312 Main St.	Oneida	X	
Foster Bros Manufacturing Company	807-811 Broad Street	Oneida	X	
Canastota Public Library	102 W. Center St.	Madison	X	
House at 115 South Main Street	115 South Main Street	Madison	X	
House at 233 James Street	233 James St.	Madison	X	
United Church of Canastota	144 W. Center St.	Madison	X	
Residence at 203 South Main Street, Canastota MRA	203 South Main Street	Madison	X	
US Post Office—Canastota	118 S. Peterboro St.	Madison	X	
Alvord House	N of Syracuse on Berwick Rd.	Onondaga	X	
Butler Center Methodist Episcopal Church*	Butler Center and Washburn Roads	Wayne	X	
East Palmyra Presbyterian Church	2102 Whitbeck Road	Wayne	X	
Andrews Street Bridge	Andrews St. at Genesee River	Monroe	X	X
Brick Presbyterian Church Complex, Inner Loop MRA	121 N. Fitzhugh St.	Monroe	X	X
Federal Building	N. Fitzhugh and Church Streets	Monroe	X	X
German United Evangelical Church Complex, Inner Loop MRA	60-90 Bittner St.	Monroe	X	X
Leopold Street Shule	30 Leopold St.	Monroe	X	X
Washington Street Rowhouses	30-32 N. Washington St.	Monroe	X	X
	1255-1257 University Avenue	Monroe	X	X
	1320 University Avenue	Monroe	X	X
Building C2 (H.F. Snyder and Son)	Main Street	Monroe	X	X
Building Z (former Richmond Residence)	70 Main Street	Monroe	X	X

Exhibit G-24—S/NR-Listed Individual or Eligible Resources within the APEs

Name	Location	County	90/110 Study Area	125 Study Area
Foster Armstrong Piano Warehouses	Commercial Street	Monroe	X	X
Huther Company	1290 University Avenue	Monroe	X	X
Jenkins Motor Car Company	1239 University Avenue	Monroe	X	X
J. Hungerford Smith Company	410 North Goodman Street	Monroe	X	X
Otis Lumber Company	936-960 East Main Street	Monroe	X	X
Rochester Public Market	Railroad Street	Monroe	X	X
Schwalb Coal & Oil Company	92 Portland Avenue	Monroe	X	X
Taylor Instrument Company	95-111 Ames Street	Monroe	X	X
Buffalo Gas Light Company Works	249 W. Genesee St.	Erie	X	
Delaware Park-Front Park System	Front Park, Porter Ave. to Symphony Cir., N along Richmond Ave., Bidwell Pkwy., Gates Cir. and Delaware Park	Erie	X	
Kibler High School	284 Main Street	Erie	X	
	1032 Niagara Street	Erie	X	
	1073 Niagara Street	Erie	X	
City Wide Trucking Company	253 Exchange Street	Erie	X	
Erie Freight Station	391 Exchange Street	Erie	X	
Riviera Theatre	27 Webster St.	Niagara	X	
US Post Office--North Tonawanda	141 Goundry St.	Niagara	X	
	1043 Fairfield Avenue	Niagara	X	
	947 Ontario Avenue	Niagara	X	
Commercial Warehouse 1910	2212 11th Street	Niagara	X	
Note: Resources that fall within the direct APE are also within the boundaries of the indirect APE.				



*Alt. 125 as shown is a potential corridor used to analyze the potential operating characteristics, environmental impacts and cost for this speed (125 mph) threshold.

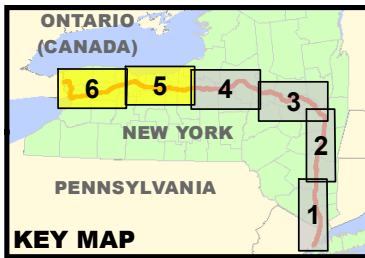


Historic Resources Map

Exhibit G-24

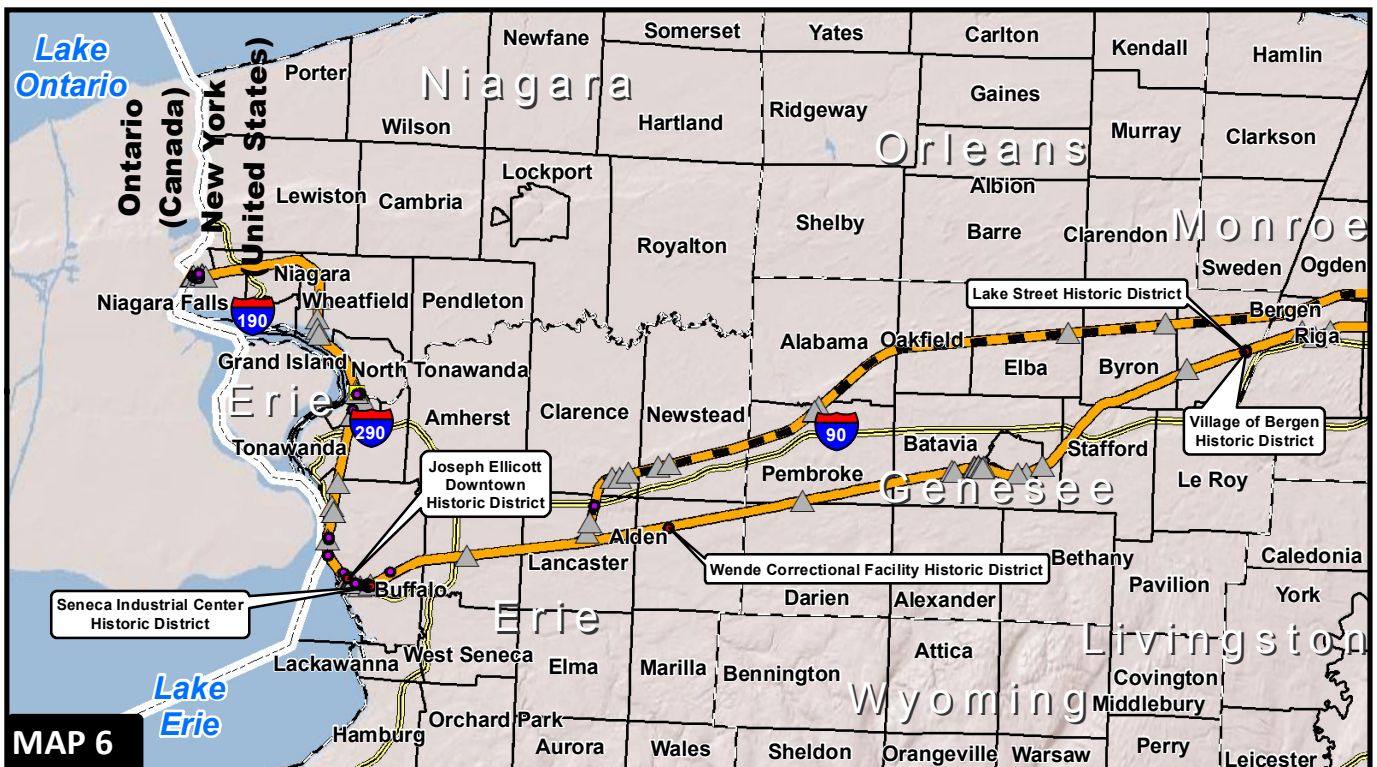
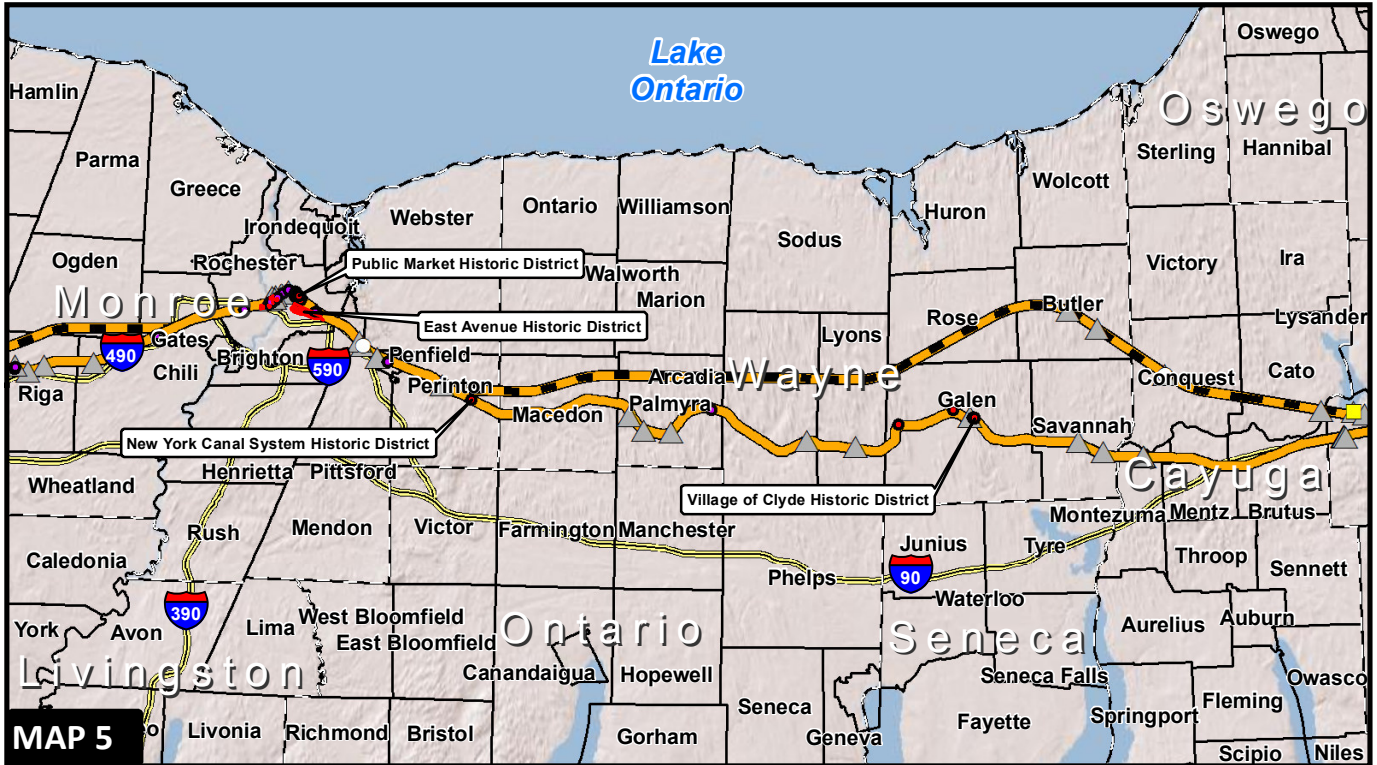
Tier 1 EIS
High Speed Rail
Empire Corridor Program



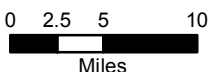


<p>★ National Historic Landmark</p> <p>Architectural Resources</p> <p>■ S/NR Listed District</p> <p>● S/NR Eligible District</p> <p>● S/NR Listed or Eligible Individual Resource</p>		<p>Archaeological Resources</p> <p>▲ Archaeological Resource</p> <p>○ Burial / Cemetery</p> <p>■ Native American Habitation/Village/Hamlet</p>		<p>— Existing Empire Corridor</p> <p>— Alternative 125 Corridor*</p>
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Sources: NPS, SHPO, and NYSDOT, 2012



* Alt. 125 as shown is a potential corridor used to analyze the potential operating characteristics, environmental impacts and cost for this speed (125 mph) threshold.



Historic Resources Map

Exhibit G-24

Tier 1 EIS
High Speed Rail
Empire Corridor Program



Exhibit G-26—Counties, Cities/Towns and Villages within the APEs

County	City/Town	Village
New York	New York City* (Manhattan)	
Bronx**	New York City* (Borough of Bronx)	
Westchester	City of Peekskill	
	City of Yonkers*	
	Town of Cortlandt	Buchanan
	Town of Greenburgh*	Croton-On-Hudson
		Dobbs Ferry
		Hastings-On-Hudson
		Irvington
		Tarrytown
	Town of Mount Pleasant	Sleepy Hollow
Putnam	Town of Ossining	Briarcliff Manor
		Ossining*
Dutchess	Town of Phillipstown	Cold Spring*
	City of Beacon	
	City of Poughkeepsie	
	Town of Fishkill	
	Town of Hyde Park	
	Town of Poughkeepsie*	
	Town of Red Hook	Tivoli
	Town of Rhinebeck	
	Town of Wappinger	
Columbia	City of Hudson	
	Town of Clermont	
	Town of Germantown	
	Town of Greenport	
	Town of Livingston	
	Town of Stockport	
	Town of Stuyvesant	
Greene	Town of Athens	Athens
	Town of New Baltimore	
Rensselaer	City of Rensselaer	
	Town of East Greenbush	
	Town of Schodack	Castleton-On-Hudson
Albany*	City of Albany	
	Town of Bethlehem	
	Town of Colonie	Colonie
	Town of Guilderland	
Schenectady	City of Schenectady*	
	Town of Duanesburg†	
	Town of Glenville	Scotia
	Town of Princetown†	
	Town of Rotterdam	
Schoharie	Town of Carlisle†	
	Town of Esperance†	Esperance†

Exhibit G-26—Counties, Cities/Towns and Villages within the APEs

County	City/Town	Village
Montgomery	Town of Amsterdam	Fort Johnson
	Town of Canajoharie	Canajoharie
	Town of Charleston†	
	Town of Florida	
	Town of Glen	
	Town of Minden	Fort Plain
	Town of Mohawk	Fonda
	Town of Palatine	Nelliston
		Palatine Bridge
	Town of Root	
Herkimer	Town of St. Johnsville	St. Johnsville
	Town of Danube	
	Town of Frankfort	Frankfort
	Town of German Flatts	Ilion
		Mohawk
	Town of Herkimer	Herkimer
	Town of Little Falls	Little Falls
	Town of Manheim	
	Town of Schuyler	
Oneida	Town of Stark†	
	City of Rome	
	City of Utica*	
	Town of Kirkland†	Clinton†
	Town of Marcy	
	Town of New Hartford†	
	Town of Sherrill†	
	Town of Vernon†	Oneida Castle†
	Town of Verona	
	Town of Westmoreland	
Madison	Town of Whitestown	Oriskany
		Whitesboro
		Yorkville
	City of Oneida	
	Town of Lenox	Canastota
		Wampsville
	Town of Sullivan	
Onondaga	City of Syracuse*	
	Town of Camillus	
	Town of De Witt	East Syracuse
	Town of Elbridge	Jordan
	Town of Geddes	Solvay
	Town of Manlius	Minoa
	Town of Salina	
	Town of Van Buren	
Cayuga	Town of Brutus	Weedsport
	Town of Cato†	
	Town of Conquest†	
	Town of Mentz	
	Town of Montezuma	
Wayne	Town of Macedon	Macedon
	Town of Palmyra	Palmyra*
	Town of Arcadia	Newark
	Town of Lyons	Lyons
	Town of Galen	Clyde
	Town of Savannah	

Exhibit G-26—Counties, Cities/Towns and Villages within the APEs

County	City/Town	Village
Monroe	Town of Riga	Churchville
	Town of Chili	
	Town of Gates	
	City of Rochester*	
	Town of Brighton	
	Town of Penfield	
	Town of Pittsford	East Rochester
	Town of Perinton	Fairport*
Genesee	Town of Pembroke	Corfu
	Town of Darien	
	Town of Batavia	Batavia
	Town of Stafford	
	Town of Byron	
	Town of Bergen	Bergen
Erie	Town of Tonawanda	Kenmore
	City of Buffalo*	
	Town of Cheektowaga	Sloan
		Depew
	Town of Lancaster	Lancaster*
	Town of Alden	
Niagara	Town of Niagara	
	City of Niagara Falls*	
	Town of Wheatfield	
	City of North Tonawanda*	
Notes: * Indicates Certified Local Government (CLG) ** Bronx County is located in the New York MCD *Within the Direct/Indirect APEs for Alternative 125 only		

14.2 Environmental Consequences

Chapter 4 of the Tier 1 Final EIS addresses and compares the impacts of the Preferred Alternative, Alternative 90B, to those of the other alternatives considered (refer to Section 4.15). Exhibit G-27 compares the total number of resources (archaeological and architectural) affected by alternative.

The potential effects of the Base Alternative and the other Build Alternatives are described in more detail below.

14.2.1 Base Alternative

The Base Alternative represents the baseline condition against which the alternatives are measured and incorporates improvements that have already been programmed and have been constructed. The Tier 1 Draft EIS addressed the potential impacts on historic resources of the eight projects included in the Base Alternative.

The Base Alternative will maintain weekday service frequencies and included completion of the eight completed projects.

Categorical Exclusions for the eight Base projects identified no adverse direct, physical or contextual impacts to archaeological sites or architectural resources in the direct APE. The CEs were reviewed to determine the potential for cultural resource effects, and, in addition, the historic assessment performed for this Tier 1 Draft EIS included research on documented cultural resources within the Base projects' APE. Although no identified resources were located within the direct APE, 26 architectural resources have been identified for this analysis within the indirect APE for all the programmed projects.

14.2.2 Alternative 90A

Categorical Exclusions for three of the projects in the 90A Alternative have been prepared and have identified no adverse impacts to architectural resources or archaeological resources in the direct APE for those specific projects.

Exhibit G-27—Comparison of Potential Impacts to Archaeological Sites and Architectural Resources, by Alternative

RESOURCE TYPE	NUMBER OF RESOURCES														
	Base Alternative			90A			90B			110			125		
	Direct	Indirect	TOTAL	Direct	Indirect	TOTAL	Direct	Indirect	TOTAL	Direct	Indirect	TOTAL	Direct	Indirect	TOTAL
Archaeological Sites	N/A	N/A	3	30	N/A	30	88	N/A	110	86	N/A	108	35	N/A	57
NHLs	N/A	N/A	0	1	1	2	1	N/A	2	1	N/A	2	0	N/A	1
S/NR-listed/eligible Historic Districts	N/A	8	8	5	6	11	6	18	33	6	18	33	0	0	9
S/NR-listed / eligible Individual Resources	N/A	15	15	12	45	57	12	99	158	12	100	159	3	5	55
TOTAL	0	24	24	48	52	100	107	117	303*	105	118	302*	38	5	122*

Note: Resources that fall within the direct APE (D) are also located within the boundaries of the (I) indirect APE, as indicated in the Total column.

*The following resources identified in Alternative 90A for the Empire Corridor South are included in the total resource count for Alternatives 90B, 110, and 125: 22 archaeological sites; 1 NHL; 9 S/NR-listed Historic Districts; 47 S/NR-listed or eligible Individual resources

Direct APE: Archaeological Sites

There are 30 previously-identified archaeological sites located in the direct APE for Alternative 90A that could experience direct, physical impacts due to construction-related activities, including 12 burial/habitation sites. These include:

- **New York County** (Manhattan) – Native American habitation and midden site and rock shelter (**2 total**)
- **Bronx County** – Native American midden site (**1 total**)
- **Westchester County**: Native American midden and camp sites and three habitation/burial sites, and three other Native American sites (**8 total**)
- **Putnam County** – Native American burial site and other traces of occupation (**2 total**)
- **Dutchess County** – two Native American habitation sites; two camp/burial sites; two Native American stray find sites; one quarry site (MP 65); and two other sites (**9 total**)
- **Montgomery County** – Native American burial site, a trail site, and two other sites (**4 total**)
- **Onondaga County** – two Native American camp/habitation sites and two other sites (**4 total**)

Direct APE: Architectural Resources

There are a total of 18 previously-identified architectural resources located in the direct APE for Alternative 90A that could experience direct, adverse impacts due to construction-related activities. These are:

- **Westchester County** – Lyndhurst (Individual) (MP 24); and Garrison Landing Historic District (Historic District) (MP 50) (**2 total**)
- **Putnam County** – Cold Spring Historic District (S/NR-listed Historic District) (MP 52.5); *Individual*: U.S. Military Academy (MP 51); and West Point Foundry (MP 52) (**3 total**)
- **Dutchess County** –*Historic District*: Wheeler Historic District (MP 64); Stone Street Historic District (MP 65); *Individual*: National Biscuit Company Carton-Making and Printing Plant (MP 59); Mount Gulian (MP 61.5); Carman, Cornelius House (MP 62); Collyer, Capt. Moses W. House (MP 62); Poughkeepsie Railroad Bridge (MP 74); Poughkeepsie Railroad Station (MP 74); and Innis Dye Works (MP 74) (**9 total**)
- **Dutchess/ Columbia counties** – Hudson River Historic District (NHL) (MP 82-102) (**1 total**)
- **Rensselaer County** – Schodack Landing Historic District (Historic District); Livingston Avenue Bridge (Individual) (MP 143) (**2 total**)
- **Montgomery County** – Dove Creek Culvert (Individual) (MP 177.5) (**1 total**)

Work proposed for Alternative 90A is expected to occur within the existing right-of way. However, these resources are located within 100 feet of work proposed in the right-of-way. Therefore, construction-related activities could result in adverse impacts to these resources. A field survey would be conducted as part of the Tier 2 analysis as appropriate if adverse impacts are anticipated to identify potential architectural resources in the direct APE. Impacts would be assessed for any resources determined to be S/NR-eligible.

Indirect APE: Architectural Resources

There are 51 architectural resources located in the indirect APE for the 90A Alternative. These include:

- **New York County** (Manhattan) – Fort Tryon Park and the Cloisters (Individual) (MP 9) **(1 total)**
- **Bronx County** –*Individual*: Wave Hill (MP 13); Colgate Robert House (MP 13); and the William E. Dodge House (MP 12) **(3 total)**
- **Westchester County** –*Individual*: Croton North Railroad Station (MP 34); Standard House (MP 41); Peekskill Freight Depot (MP 41); Bear Mountain Bridge and Tollhouse (MP 45); Tarrytown Railroad Station (MP 25); Riverside Hose Company (MP 25); and a resource located on the southeast corner of Central Avenue and North Water Street (MP 41.5) **(7 total)**
- **Putnam County** –*Individual*: Wilson House (MP 49.5); Rock Lawn and Carriage House; and Eagle’s Nest (MP 51) **(3 total)**
- **Dutchess County** –*Historic District*: Main Street Historic District (MP 65); Union Street Historic District (MP 73.5); Mill Street-North Clover Street Historic District; *Individual*: Shay’s Warehouse and Stable (MP 65); Shay, William Double House (MP 65); Zion Memorial Chapel (MP 65); Brower, Abraham House (MP 65); Brower, Adolph House (MP 65); Bannerman’s Island Arsenal (MP 55.5); Chelsea Grammar School (MP 62); Church of the Holy Comforter (MP 73.5); Pelton Mill (MP 74); Old St. Peter’s Roman Catholic Church and Rectory (MP 74); Hoffman House (MP 74); Roosevelt Point Cottage and Boathouse (MP 76); Rhinecliff Hotel (MP 89); O’Brien General Store and Post Office (MP 89); Riverside Methodist Church and Parsonage (MP 89); Metro-North Railroad Bridge (MP 58); Mid-Hudson Bridge (MP 73); Johnson Plumbing Complex (MP 73); and Cornell Boathouse (MP 74.5) **(22 total)**
- **Columbia County** – Hudson Historic District (MP 114.5) (Historic District); *Individual*: Wiswall, Oliver House (MP 113.8); Requa House (MP 129); and Hudson and Boston Railroad Shop (MP 114.5) **(4 total)**
- **Montgomery County** –*Historic District*: Amsterdam East Main Street Historic District (MP 176); New York Barge Canal System Historic District (NHL) (MP 159-358.5); *Individual*: Guy Park Manor (MP 176.5); 6-8 Voorhees Street (MP 175.5); 366, 399, 401 West Main Street (MP 176.5); Guy Park (MP 177); resource on West Main Street (MP 177); and World War I Memorial (MP 177.5) **(10 total)**
- **Onondaga County** – New York State Fairgrounds Historic District (MP 294) (Historic District) **(1 total)**

Although adverse indirect, contextual effects to resources within the indirect APE are not anticipated, a field survey of potentially affected resources may be conducted as part of the Tier 2 analysis, if necessary to assess potential adverse effects to these resources and to identify potential architectural resources in the APE.

14.2.3 Alternative 110

Direct APE: Archaeological Sites

A majority of the previously-identified archaeological sites that have the potential to be adversely impacted by the Alternative 110 are the same as those that could be adversely impacted by the similar projects proposed for Alternative 90B, including 18 burial/habitation sites. There are three exceptions, which will result in Alternative 110 impacting two fewer sites than Alternative 90B:

- Two Native American unspecified sites located in the direct APE for Alternative 90B in Schenectady County are not located in the direct APE for Alternative 110.
- One Native American stray find site located in the direct APE for Alternative 90B in Montgomery County would not be located in the direct APE for Alternative 110. Conversely, one Native American habitation site in Montgomery County located in the direct APE for Alternative 110 is not located in the direct APE for Alternative 90B.

Direct APE: Architectural Resources

The number of historic resources located in the direct APE for Alternative 110 are the same as the number of resources located in the direct APE for Alternative 90B. Therefore, the number of previously identified architectural resources that could experience adverse, direct impacts due to construction-related activities in Alternative 110 is the same as those for Alternative 90B, the Preferred Alternative.

As with Alternative 90B, there are seven existing stations along Empire Corridor West where improvements are proposed for Alternative 110—one of which has been identified as a known architectural resource: Utica Station, located in Oneida County. Additionally, as with Alternative 90B, there are a number of rail bridges located within the right-of-way, which could be adversely impacted by work proposed for this alternative.

Certain elements of Alternative 110, including the proposed realignment of sections of Route 5, could potentially impact residential and commercial buildings outside the right-of-way at the following locations: MPs 164.5-165.4; 172.6; 173.6; 183.2; 184.5; 185; 186.8; 187.3; 189; 191.7; 192.5-192.8; 196.4; 196.7; 196.9; 198; 200.6; 210.8; 226.4-227; 228; 230.4-230.9; 360.6; 361.2; and 402.4.

The exact area of the proposed property acquisitions at MPs 168.3, 184.6, 186.3, 191.7, 198.1, 200.6, 207.5, 210.8, 215.1, 226.9, 228.0, 230.8, 237.2, 286.4, 341.1, 361.4, 377.6, and 389.1 has not yet been determined. This assessment assumes that the property to be acquired would be directly adjacent to the existing right-of-way. Although there are no previously identified architectural resources located in close proximity to these mile markers, there could be adverse impacts to potential architectural resources as a result of the property acquisitions proposed for Alternative 110.

Indirect APE: Architectural Resources

As with the direct APE, the number of historic resources located in the indirect APE for Alternative 110 are the same as the number of resources located in the indirect APE for Alternative 90B, with the addition of the Walrath-Van Horne House (MP 201.5), an S/NR-listed individual resource in Montgomery County. Although direct, adverse impacts to architectural resources are not anticipated

for resources located within the indirect APE, it is possible that this alternative could have indirect, contextual effects to these resources.

14.2.4 Alternative 125

Alternative 125 would also include the projects proposed for Alternative 90A in the direct and indirect APEs for Empire Corridor South (MP 1 to MP 143) and the Niagara Branch.

Direct APE: Archaeological Resources

There are 35 previously identified archaeological sites located in the direct APE of proposed new track for Alternative 125 (see Exhibit G-27) that could experience direct, physical impacts due to construction-related activities, including six burial/habitation sites. These are:

- **Albany County** – two Native American camp sites; and one historic industrial site (**3 total**)
- **Schenectady County** – Native American camp site (**1 total**)
- **Schoharie County** – Native American unspecified site (**1 total**)
- **Montgomery County** – Native American stray find and historic unspecified site (**2 total**)
- **Herkimer County** – Historic burial site (**1 total**)
- **Oneida County** – Native American camp site, burial, and habitation sites; and Site 3 identified by the Oneida Nation (**4 total**)
- **Madison County** – two Native American stray find sites and one camp site and Sites 4 and 5 identified by the Oneida Nation (**5 total**)
- **Onondaga County** – one Native American camp site, two Native American habitation sites; two Native American stray find sites; and two historic domestic sites (**7 total**)
- **Cayuga County** – Native American burial and stray find sites (**2 total**)
- **Wayne County** – Native American camp and stray find sites (**2 total**)
- **Genesee County** – two Native American camp sites and one Native American stray find site (**3 total**)
- **Erie County** – two Native American camp sites; one Native American camp/stray find site; and one Native American stray find site (**4 total**)

Direct APE: Architectural Resources

Work proposed for the Alternative 125—which mainly consists of the construction of new track—could have adverse impacts on architectural resources located within the direct APE due to construction-related activities.

There are three architectural resources located in the direct APE for Alternative 125 that could experience direct, adverse impacts due to construction-related activities. These include:

- **Schenectady County** – Liddle, Robert Farmhouse (Individual) (MP 167) (**1 total**)
- **Madison County** – Deferriere House (Individual) (MP 252.8) (**1 total**)

- **Erie County** – Hull, Warren House (Individual) (MP 411) **(1 total)**

Indirect APE: Architectural Resources

There are five architectural resources located in the indirect APE for the Alternative 125. These include:

- **Albany County** – *Individual*: Nut Grove (MP 144); and 924 New Scotland Road (MP 147) **(2 total)**
- **Schenectady County** – *Individual*: Reformed Presbyterian Church Parsonage (MP 169); Halladay House (MP 172); and US 20 between Knight and Mudge Roads (MP 170.5) **(3 total)**

Although direct, adverse impacts to architectural resources due to construction-related activities are not anticipated for resources located within the indirect APE, it is possible that this alternative could have indirect, contextual impacts to these resources.

15. Parks and Recreational Areas

15.1 Existing Conditions

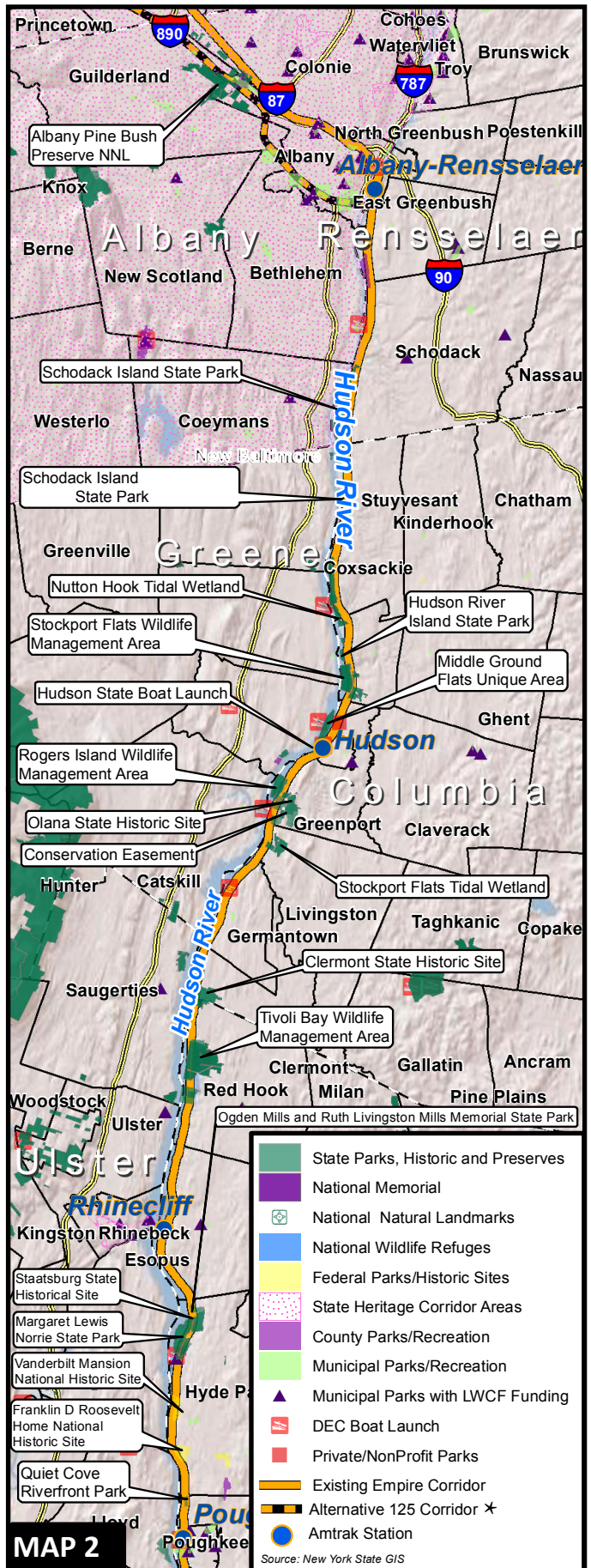
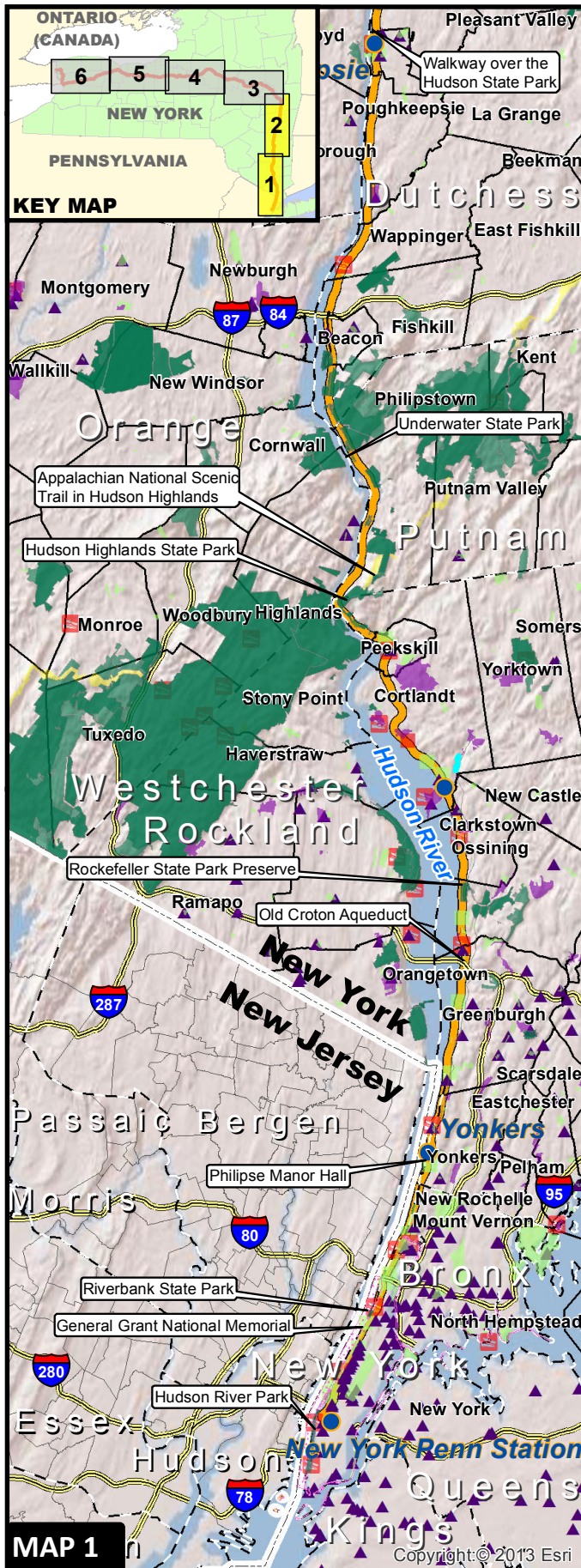
The federal, state, regional, and local parks in the study area are shown in the following exhibits. There are several types of federally designated parks or recreation areas in the study area, including National Heritage Areas, a National Memorial, several National Natural Landmarks, a National Wildlife Refuge, National Historic Sites, and National Scenic/Recreational Trails. Exhibits 4-36 through 4-40 provides a detailed listing of federal, state, county, and local parks and recreation areas within 1,000 feet of the corridor centerline. Exhibit 4-36 summarizes the publicly owned acreage of these federally-protected potential Section 4(f) or 6(f) parkland resources within 1,000 feet of the corridor centerline for the 90/110 and the 125 Study Areas.

New York State has designated state parks, areas of cultural and historic significance, state historic parks, and state historic sites that are administered by the NYSOPRHP, as shown in Exhibit 4-37.

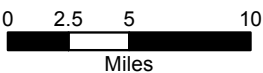
New York state forests and state-owned Wildlife Management Areas are administered by the New York State Department of Environmental Conservation. The NYSDEC state forests preserves and unique areas, and Wildlife Management Areas within 1,000 feet of the corridor centerline for both the 90/110 and the 125 Study Areas are shown in Exhibit 4-38, one of which has received Section 6(f) funding.

There are roughly 100 county, municipal and non-profit parks identified within the study area. Exhibit 4-39 and Exhibit 4-40 show these parks within the 90/110 and 125 Study Areas and potential protections under Section 6(f) and Section 4(f).

Exhibit G-28 shows the locations of the parks and recreation areas in the study area.



*Alt. 125 as shown is a potential corridor used to analyze the potential operating characteristics, environmental impacts and cost for this speed (125 mph) threshold.

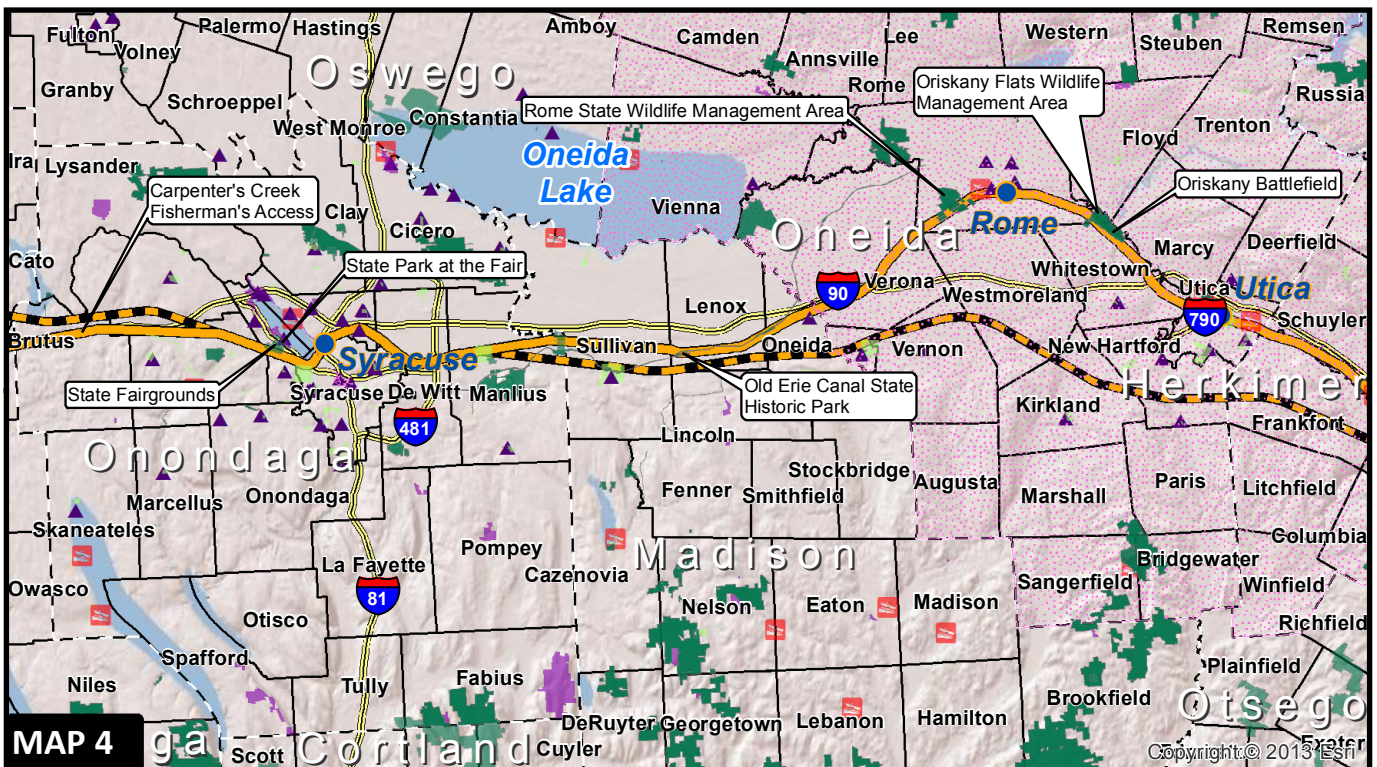
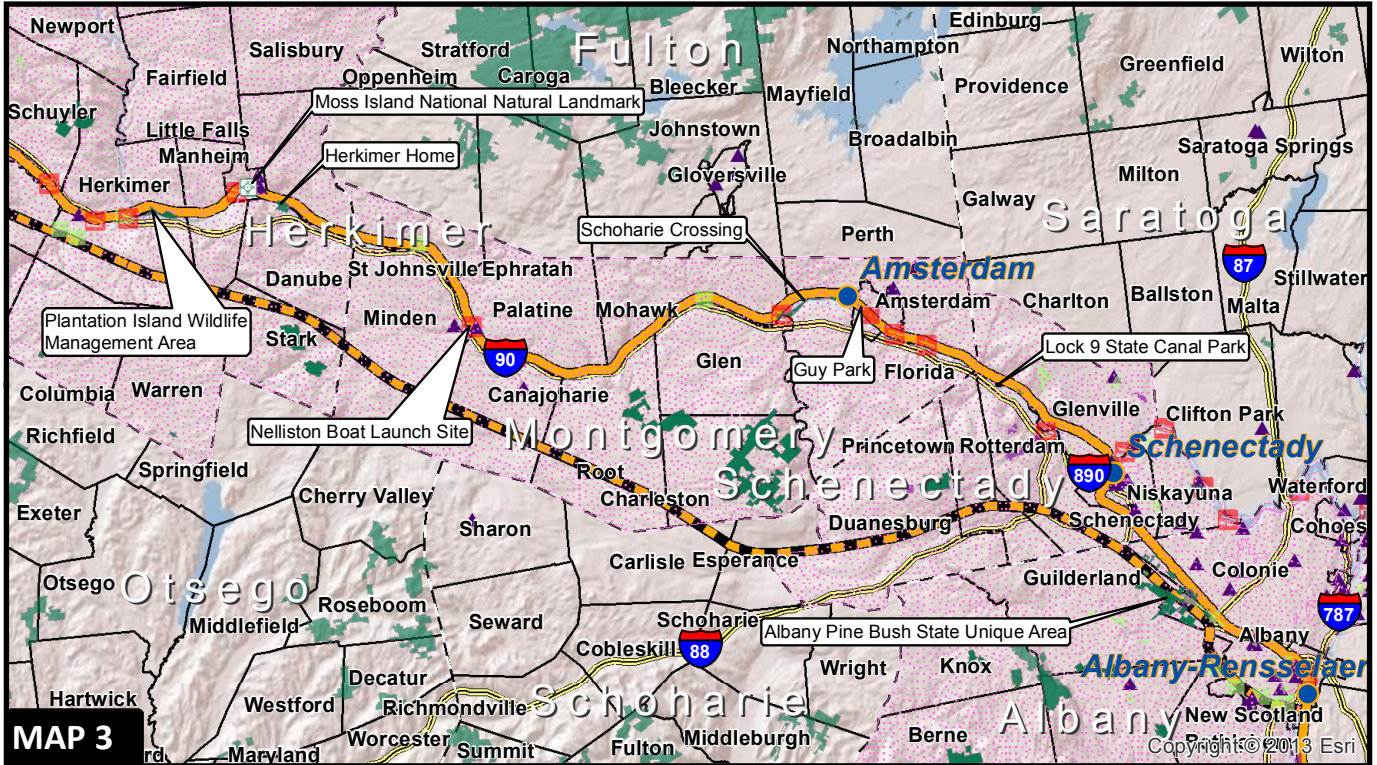
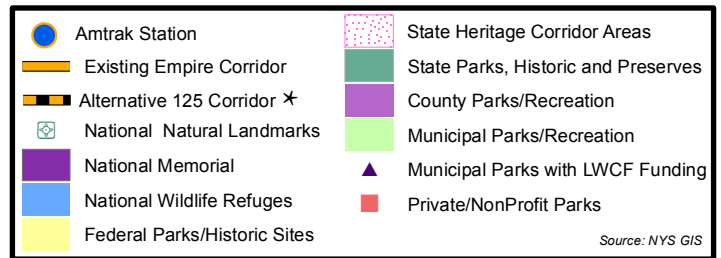
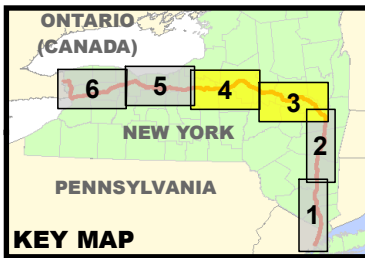


Parks and Recreation Map

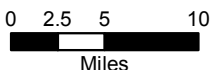
Exhibit G-32

Tier 1 EIS
High Speed Rail
Empire Corridor Program





*Alt. 125 as shown is a potential corridor used to analyze the potential operating characteristics, environmental impacts and cost for this speed (125 mph) threshold.

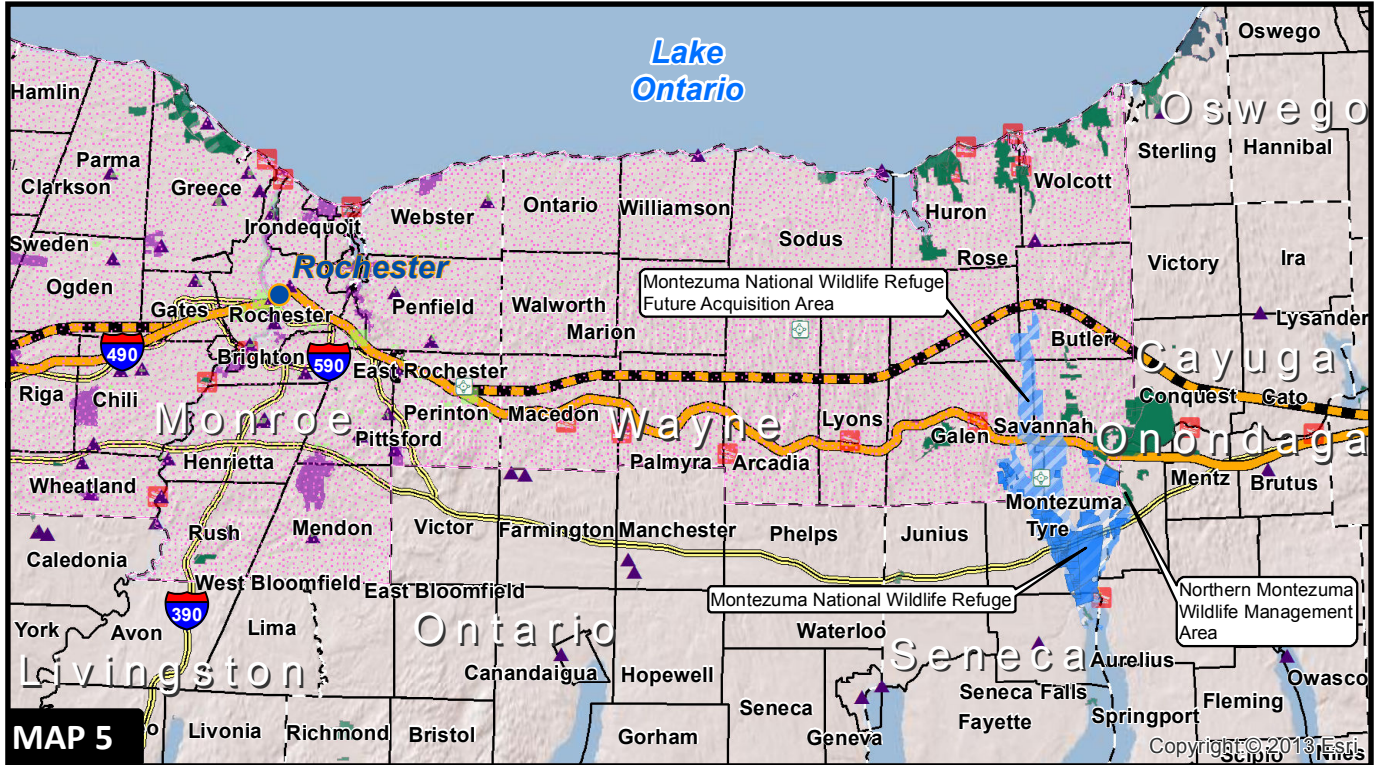
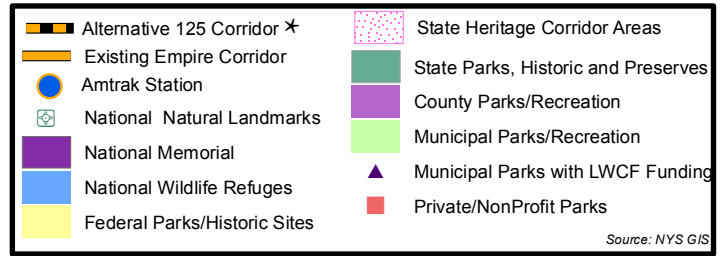
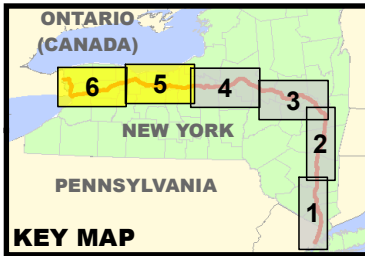


Parks and Recreation Map

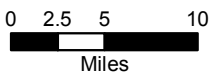
Exhibit G-32

Tier 1 EIS
High Speed Rail
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★Alt. 125 as shown is a potential corridor used to analyze the potential operating characteristics, environmental impacts and cost for this speed (125 mph) threshold.



Parks and Recreation Map

Exhibit G-32

Tier 1 EIS
High Speed Rail
Empire Corridor Program



15.2 Environmental Consequences

Chapter 4 of the Tier 1 Final EIS addresses and compares the impacts of the Preferred Alternative, Alternative 90B, to those of the other alternatives considered (refer to Section 4.16). The potential effects of the Base Alternative and the other Build Alternatives are described in more detail below.

15.2.1 Base Alternative

The Base Alternative represents the baseline condition against which the alternatives are measured and incorporates improvements that have already been programmed and have been constructed. The Tier 1 Draft EIS addressed the potential impacts on parks and recreation areas of the eight projects included in the Base Alternative. The Base Alternative will maintain weekday service frequencies. Because proposed work with this alternative was anticipated to be located entirely within the right-of-way, no land acquisitions were anticipated, and no impacts to parklands were anticipated.

15.2.2 Alternative 90A

It is anticipated that work could be contained within the right-of-way, and no direct impacts on parklands are anticipated. Increased frequency of service could have the potential to incur additional visual and noise impacts from train passbys, however the additional trips represent a minimal increase.

15.2.3 Alternative 110

Empire Corridor South

No additional work within Empire Corridor South, other than that proposed for Alternative 90A, is proposed, and additional direct parkland impacts are not anticipated to occur. Increased frequency of service could have the potential to incur additional visual and noise impacts from train passbys, however the additional trips represent a minimal increase over current rail traffic that includes frequent MetroNorth commuter rail.

Empire Corridor West/Niagara Branch

With Alternative 110, trackwork would start at MP 159 and extend west from here, crossing over the Mohawk River/Erie Canal on an existing bridge. In the City of Schenectady, Front Street Park and Pool adjoins the south side of the railroad on the south river bank, and the Glenville Bike Trail extends under the bridge on the north river bank. Further set back on the southwest side are Riverside Park in Schenectady and Collins Park and Lake in Scotia. At MP 167, the railroad extends north of the Lock 9 Canal Park, which is on the opposite (southwest side) of Route 5, but will not directly impact the park.

Work that may extend outside of the right-of-way may occur at Amsterdam Station and at other locations in Montgomery County. Proposed track and station improvements at Amsterdam Station and trackwork at MP 179 are located in the vicinity of the Erie Canal, but should not affect the canal.

In Monroe County, the addition of a fourth track around the Rochester Station could also involve

right-of-way impacts. This work will extend in the vicinity of facilities such as Upper Falls Park in the City of Rochester and will cross the Erie Canal and the Erie Canalway Heritage Trail at MP 374.5, but are not anticipated to directly affect parklands. If Alternative 110 had been selected as the Preferred Alternative, the potential for impacts at the canal crossing will be evaluated as designs are advanced in Tier 2.

In Genesee County, Alternative 110 may impact a county park at MP 402. The proposed track alignment passes through the Dewitt County Recreational Facility in the Town of Batavia.

15.2.4 Alternative 125

Alternative 125 would include Alternative 90A improvements along the Hudson Line and Niagara Branch. Alternative 90A would largely be situated within the right-of-way and therefore would not involve substantial parkland impacts.

Empire Corridor South

No new improvements, beyond what is proposed for Alternative 90A, would be proposed for Alternative 125 along the majority of Empire Corridor South. However, roughly one mile of the proposed 125 mph track would extend south from Albany-Rensselaer Station to cross the Hudson River. Since there are no parklands within this one-mile section of rail corridor, there are no additional direct impacts to parklands within Empire Corridor South. Increased frequency of service could have the potential to incur additional visual and noise impacts from train passbys, however the additional trips represent a minimal increase over current rail traffic that includes frequent MetroNorth commuter rail.

Empire Corridor West/Niagara Branch

At MP QH152, the New York State Thruway and Alternative 125 enter the Albany Pine Bush Preserve. At MP QH153, Alternative 125 transitions off of the Thruway median and may impact the Albany Pine Bush Preserve at this location. At MP QH155, Alternative 125 may impact Fusco Town Park located directly to the south of the Thruway and the rail corridor.

In Herkimer County, between MPs QH217 and QH218, Alternative 125 passes through a wooded area in Russell Park within the Town of German Flatts.

Between MPs QH244 and QH245, Alternative 125 also passes through Atunyote Golf Club, owned by the Oneida Nation, within the Town of Vernon.

Alternative 125 crosses Erie Canal State Park at three locations before meeting up with the existing rail corridor at MP 283 (just before MP QH269 in the 125 Study Area). The three Erie Canal State Park crossings are located between MPs QH260 and QH261; between MPs QH262 and QH263, both in Madison County; and between MPs QH265 and QH266 in Onondaga County.

In Onondaga County, west of the Syracuse station at MP QH278.5, Alternative 125 passes by Onondaga Lake County Park. The tracks would be on elevated structure above the existing tracks at this location, so right-of-way should be minimized.

In Monroe County, close to the Genesee border, Alternative 125 passes near Churchville County Park

at MP QH371. No additional impacts to parklands are anticipated for the remainder of the 125 Study Area from MP QH371 to where it merges back to the existing corridor at MP QH413 in Erie County.

In Erie County, just past MP QH408, Alternative 125 passes near Clarence Town Park, which may be impacted by this alternative. Between MPs QH408 and QH409, this alternative passes through the Tillman Road Swamp State Wildlife Management Area that may be impacted.

16. Visual

16.1 Existing Conditions

16.1.1 Empire Corridor South

Views from the Railroad

In **Manhattan** (MPs 0 to 11.5), the railroad runs primarily in a tunnel from Pennsylvania Station to 123rd Street. However, there are some sections that are daylighted: 36th Street to 39th Street, 43rd Street to 46th Street, 48th Street to 49th Street and 60th Street to 61st Street. Where the railroad runs aboveground, the viewshed in Manhattan is entirely urban and the landform is flat.

After the railroad daylights north of 123rd Street, the railroad is bracketed by the Henry Hudson Parkway (Route 9A) on the west and Riverside Drive on the east. The railroad passes underneath elevated Riverside Drive from 153rd Street to 155th Street, and underneath the Henry Hudson Parkway just past MP 7. North of where the railroad crosses under the parkway, the railroad extends through the greenway along the Hudson River and continues under the George Washington Bridge (I-95) at MP 8, closely following the river's edge north of I-95. The tracks again pass underneath the elevated Henry Hudson Parkway interchange ramps between MP 9 and MP 10.

The views at the crossing of the Spuyten-Duyvil swing span bridge into Bronx County are primarily of the Harlem River and Hudson River to the west. In **Bronx County** (MPs 11.5 to 14), the railroad closely follows the edge of the Hudson River. Views to the west are of the Hudson River, and a forested buffer, including Riverdale Park on the south (MPs 11.5 and 13), dominates the views to the east. The northernmost section in the county includes the Metro-North Riverdale Station (MP 13) and the campus of the College of Mount Saint Vincent to the east of the railroad is buffered by forested vegetation.

In **Westchester County** (MPs 14 to 45), the railroad continues to closely follow the east river bank, but transitions from a primarily urban landscape on the south at the Yonkers Station MP 15, to more rural forested landscapes with coves and high bluffs to the north. The viewshed consists of the Hudson River to the west, and includes urban development along the more urban waterfronts, and views to the east are generally buffered by vegetation along the tracks. The viewshed in the northern part of the county is a mix of urban and forest land along the corridor. The landscape becomes more rural north of Yonkers, and the railroad extends under the Tappan Zee Bridge (MP 25) and north through more urban areas of Tarrytown, Ossining, Croton-on-Hudson, and Peekskill.

With but a few exceptions, the railroad closely follows the east bank of the Hudson River through most of Westchester County, particularly to the south. South of Peekskill there are several long, fairly sharp curves that bring the railroad well inland. The rail corridor is within the Hudson Highlands Scenic Area of Statewide Significance (SASS) between MP 40.5 to the Westchester County line. This

segment is especially scenic, passing through the Hudson Highlands, requiring several short tunnels where the Hudson River narrows and the landscape on both sides rises precipitously from zero to 1,000 feet in several locations. At the northern end of the county, the railroad passes under the Bear Mountain Bridge (MP 45) and through four tunnels along this section of the railroad, which temporarily obstruct views to and from the train:

- Osca Tunnel (MP 36.80), approximately 250 feet long
- Little Tunnel (MP 43.62), approximately 75 feet long
- Middle Tunnel (MP 44.40), approximately 300 feet long
- Route 6 Tunnel (MP 45.07), approximately 175 feet long

There are also a number of bays that intrude inland where the railroad is built on causeways that include a small bridge to drain Peekskill Bay and associated streams and small rivers. In areas where the railroad heads inland the views from the railroad are generally of forest or marsh areas from both sides of the train.

Upon crossing into **Putnam County** (MPs 45 to 54.5) the railroad continues to closely follow the east bank of the river, and the primary viewshed is dominated by the river and high forested bluffs and several coves and marshlands along this section. Near MP 50 to 52, there are scenic views of the West Point Military Academy high on the banks of the west river bank. The entire county is located within the Hudson Highlands SASS, and at the northern end of the county, the railroad passes through Hudson Highlands State Park. The railroad passes through two tunnels, Garrison Tunnel (MP 50.06), approximately 450 feet long, and Breakneck Tunnel (MP 54.52), approximately 550 feet long, before continuing into Dutchess County.

In **Dutchess County** (MPs 54.5 to 100.5), the railroad continues to closely border the east river bank. The railroad passes north through the Hudson Highlands State Park, before entering urban areas in Beacon and passing under the Newburgh-Beacon Bridge (I-84) (MP 60). The railroad extends through Scenic Areas of Scenic Significance (SASSs) throughout the length of the county, with the exception of the section of railroad between the state park (the Hudson Highlands District SASS at MPs 54.5 to 58) and just south of Poughkeepsie. The railroad extends along the river bank, continuing on causeway across several coves, before passing through Poughkeepsie, and extending under the Mid-Hudson Bridge (U.S. Route 44 and State Route 55) and the Walkway over the Hudson State Park Bridge, just south of the Poughkeepsie Station. North of Poughkeepsie, the railroad extends through the Estates District SASS (MPs 70 to 100.5), adjoins Esopus/Lloyd SASS (MPs 70 to 87), and extends in the vicinity of a number of historic estates and parks between Hyde Park and Staatsburg. The railroad does move inland away from the Hudson River at Staatsburg.

To maintain a relatively straight alignment, the railroad constructed a large number of causeways where bays and marsh areas intrude inward from a straight path. One of two causeways in Dutchess County that are notable for their length includes the 0.8 mile-long Vanderburgh Cove. To the north, the railroad closely follows the river's edge, passing through the Rhinecliff-Kingston Station before passing through the approximately 230-foot-long Rhinecliff Tunnel (MP 91.33) and under the Kingston-Rhinecliff Bridge (MP 93). To the north, the railroad passes over the other notable causeway, the 1.5-mile-long Tivoli Bay at Annadale, and passes through the Tivoli Bays State Wildlife Management Area between MPs 95.5 and 98.5. The Tivoli Bays is also included in the Mid-Hudson Historic Shorelands Scenic District designated under Article 49 of the Environmental Conservation Law.

In **Columbia County** (MPs 100.5 to 129.5), the railroad continues to closely follow the eastern river

bank, particularly on the southern half of the county. Views from the railroad are dominated by forested vegetation, open space, and the Hudson River and its islands and marshes on the southern half of the county. The railroad extends through either designated scenic areas or parks through the majority of the county. The corridor runs through Estates SASS District from the Dutchess County line (MP 100) to MP 103.5. The other SASS districts that the corridor runs through in Columbia County are the Catskill Olana District (MPs 107 to 112) and the Columbia/Greene North District (MPs 115 to 129.5), which extends into Rensselaer County. The railroad extends past several islands where it extends along the shoreline. The railroad adjoins Roger's Island where it passes under the Rip Van Winkle Bridge at MP 111.5. To the north, the railroad passes another island (Middle Ground Flats), north of the Hudson Station, where the railroad extends across a long, 1.6-mile-long causeway over North Bay. To the north, the railroad extends past the Hudson River Islands where it extends on causeway over several coves. To the north, the railroad moves further inland in sections and away from the Hudson River shoreline, roughly parallel to New York State Bicycle Route 9/Route 9J. The railroad extends along the edge of Muitzes Kill, a branch of the river that adjoins Houghtaling Island at the north end of the county, where it extends into Rensselaer County.

The viewshed in the **Rensselaer County** (MPs 129.5 to 143) section varies from forested and agricultural to urban, with the urban areas clustered in and around the city of Rensselaer at the north end of the county. The Columbia-Greene SASS extends on the southernmost part of the county, from the county line (MP 129.5) to MP 131.5. The southern third of Rensselaer County continues alongside the island in the Hudson River (Schodack Island/Castleton Island State Park), bracketed by Muitzes Kill on the west and New York State Bicycle Route 9/Route 9J on the east. The railroad extends under the Castleton Bridge (Berkshire Connector of the New York State Thruway) and continues along the bank of the Hudson River past the north end of Schodack Island, passing through the village of Castleton-on-Hudson. North of the village, the railroad extends inland, passing between Moordener Kill on the west and Route 9J on the east, and continuing north through forested and agricultural lands and alongside the east side of the Papscaene Island Nature Preserve (MPs 137.5 to 139). Where the railroad rejoins Route 9J, just outside the city of Rensselaer, the adjoining uses along the river and extending into the city include industrialized uses and fuel tank farms. Approaching the Albany-Rensselaer Station, there are views of the Albany skyline across the river, and adjoining urbanized areas also include residential neighborhoods and office buildings. After leaving the Albany-Rensselaer Amtrak station (MP 142) the railroad continues north through urban/industrial areas. The railroad crosses the Hudson River at the Livingston Avenue Bridge, a swing-span bridge, (west of MP 143) where the river is fronted by parks and greenways.

16.1.2 Empire Corridor West/Niagara Branch (90/110 Study Area/125 Study Area)

Views from the Railroad: 90/110 Study Area

After crossing the Livingston Avenue Bridge into **Albany County** (MPs 143 to 155), the viewshed includes parks/greenways along the river and industrialized waterfront development in the city of Albany. The eastern half of the county includes views of industrial urban development, and views from the railroad are screened by forest vegetation and include views of adjoining or overpassing highways and interchange ramps where the railroad roughly parallels I-90 (New York State Thruway) and crosses under the Adirondack Northway (I-87), just past the city limits. The views along the western half of the county are dominated by screening by forest vegetation within a patchwork of parklands (including the Albany Pine Bush State Unique Area) and undeveloped lands.

In **Schenectady County** (MPs 155 to 170), even though the tracks pass through urbanized areas that include residential neighborhoods on the southern half of the county, the tracks are adjoined by trees in many locations that screen views of adjacent areas. In the city of Schenectady, the views from the train include views of institutional uses and the downtown business district. The railroad extends along a 0.2-mile section of Erie Boulevard, the western end of the Mohawk Towpath Scenic Byway, a New York State scenic byway. The views north of the downtown area include the Mohawk River/Erie Canal at the river crossing, and the railroad extends through increasingly more rural forested areas with pockets of farmlands to the north where views are buffered in many locations by trees. North of the river crossing, the middle third of the county extends through more developed and residential areas in and north of the village of Scotia, although trees shield views of adjoining properties in many locations. The northern third of the county, views includes intermittent views of Route 5 and the Mohawk River/Erie Canal where the railroad parallels these features.

The Revolutionary Trail Scenic Byway (Route 5/29) extends alongside the length of the Empire Corridor and the Mohawk River/Erie Canal from Route 5 in Schenectady County to Herkimer, then follows Route 5S and the Erie Canal to Utica and continues northwest along Route 49 and the Erie Canal to Rome in Oneida County. The eastern half of the Empire Corridor West is quite scenic as the railroad closely follows the Mohawk River/Erie Canal to Herkimer where West Canada Creek flows into the Mohawk River to drain part of the Adirondack Highlands. The east-west passage of the Mohawk River follows a natural divide between the southern Adirondack uplands to the north and the northern fringes of the Catskills to the south. Both of these uplands bordering the Mohawk River can be described as a peneplain; an eroded plateau with a rolling surface. The Mohawk River is considerably less than straight and in places plateaus rise steeply over 800 feet. West of Herkimer, the railroad follows the New York State Canal System and follows the natural lower path to the west exploited by the builders of the Erie Canal. The landscape becomes less vertical approaching Utica.

In **Montgomery County** (MPs 170 to 210), the railroad closely parallels and extends between Route 5, on the north, and the Mohawk River/Erie Canal on the south, throughout much of the county. Views throughout the county are dominated by Route 5 and adjoining uses, which are predominantly rural agricultural, forested, and residential, with views of the river where it closely adjoins and is not screened by forest vegetation. In the eastern sections of the county, rock ledges adjoin Route 5, and the slopes adjoining the railroad steepen, and generally flatten throughout the rest of the county. Where the railroad closely adjoins the riverbanks, views include uses on the opposing river bank where the river narrows, and there are several islands in the river. In some locations, the railroad is set back from Route 5, and views of the highway are obscured by trees. Urban viewsheds are largely limited to the city of Amsterdam, with the Amsterdam Amtrak Station (MP 177.5); the village of Fonda; and the village of St. Johnsville. In the villages of Palatine Bridge and Nelliston, where the railroad follows the riverbank, it is set back from the village centers and screened by forest vegetation.

The railroad continues to parallel Route 5 and the Mohawk River/Erie Canal throughout much of **Herkimer County** (MPs 210 to 235). The viewshed along the railroad consists of forest, agricultural, and rural residential uses outside the cities of Little Falls and Herkimer. In many locations, where the railroad does not closely adjoin Route 5 or the river, views of these features are obscured by trees. A majority of the landform along the rail corridor is flat with the exception of moderate to severe slopes near Little Falls and Herkimer. The railroad passes through the southern outskirts of both cities, and views from the tracks are screened from view to varying extents by trees and limited by steeper slopes. Scenic islands in the river/canal include the Moss Island National Natural Landmark in Little Falls (near MP 216), where intermittent views of the rock ledges may be visible through trees adjoining the tracks, and Plantation Island State Wildlife Management Area south of the city of

Herkimer (MP 222). The New York State Thruway (I-90) crosses over the railroad in the southwest part of the city of Herkimer (MP 225). At MP 231.5, the railroad crosses the Erie Canal just south of Lock 19, which is visible at the canal crossing.

In **Oneida County** (MPs 235 to 264), west of the county line, the railroad is shielded by trees and surrounded by forested areas where it extends past industrialized areas. The railroad closely adjoins a section of Route 5S to the west, passing into industrialized areas surrounding the Utica Boehlert Transportation Center (MP 237.5) at the northern edge of city. The railroad extends through flat open and industrial areas adjoining the station area, then extends west under the I-790 interchange ramps. West of these ramps, the views from the railroad are screened by forested areas, which occupy the majority of area north of the tracks where there are large expanses of marshland, forestland, and farmland and scattered industrial uses. At MP 241.8, the tracks cross under the New York State Thruway (I-90). The south side of the tracks are bordered by residential neighborhoods, many of which are screened by trees, and industrial/commercial uses. Further west, the railroad extends through the Oriskany Flats State Wildlife Management Area at MPs 244.8 to 246.6 and other undeveloped lands and continues through the southern, less developed half of the city of Rome, including the Rome Station (MP 251.3). The railroad is set back from the Erie Canal in Rome, and views of the canal are screened by trees. Further west, the railroad continues through farmlands, wetlands, forestlands, and the Rome State Wildlife Management Area (MPs 253.6 to 255.8).

In **Madison County** (MPs 264 to 278), the viewshed is predominantly forest land and agricultural land with urban development concentrated in the middle of the county in the village of Canastota. The corridor is almost entirely flat. West of the Oneida county line, the railroad extends through the northern, less developed areas of the city of Oneida, where views of adjoining areas are screened to a large extent by trees that either adjoin the right-of-way or are part of extensive areas of forest along the railroad. The Old Erie Canal State Park/Erie Canalway Trail extends north of or alongside the railroad between MPs 266.5 to 269, and the Old Erie Canal and adjoining areas of swamp adjoins the tracks in several locations, continuing north of, and further from, the railroad through Canastota. In Canastota, the views from the tracks are of more densely developed residential neighborhoods, businesses, and industrial uses. West of Canastota, the Old Erie Canal rejoins the north side of the railroad, north of Barlow Street, at MP 270.5, eventually crossing the railroad at MP 272. Agricultural lands are a more prominent feature of the surrounding landscape in the western part of the county, where the railroad continues through rural, partially forested landscape.

Crossing into **Onondaga County** (MPs 278 to 309), the viewshed continues to be primarily agricultural and forested, paralleling Saintsville Road and adjoining residences and businesses to the north, before crossing on the south side of Dewitt Yard (MPs 282.5 to 286) in and west of the village of Minoa. Views south of the tracks are of forested and residential areas through forested buffers alongside the railroad, transitioning to industrial uses approaching the I-481 Bridge in East Syracuse. West of this area, the railroad extends through increasingly urbanized and industrial/commercial areas in and around the city of Syracuse, with some views from the railroad screened by forest vegetation. In downtown Syracuse, the railroad is buffered by trees where it extends between Ley Creek on the west and the Alliance Bank Stadium and the Syracuse Regional Transportation Center (MP 291.5) on the east. Past the station, the railroad extends under the I-81 bridge and interchange ramps, and between Onondaga Lake and park on the west, and the Carousel Place shopping mall on the east. The railroad extends over the Erie Canal outlet along the lakefront and is buffered by trees to the south where it extends past industrial uses on the east, under I-690, and continues through industrial urban development (including the State Fairgrounds) west of the city of Syracuse. West of the fairgrounds, the railroad is buffered by trees where it extends through increasingly rural forested and agricultural areas and scattered industrial and residential areas. Although sections of the

railroad closely parallel the New York State Thruway (I-90) and the Erie Canalway Trail, views are largely obscured by forested vegetation.

Leaving Onondaga County, the railroad extends west following a broad, level valley generally drained by the west to east flowing Seneca River/Erie Canal. In **Cayuga County** (MPs 309 to 320), the primary viewshed consists of agricultural and forest lands with rural, low-density development, and no viewsheds in major urban centers. The landform is generally flat with some small areas of mild to moderate slopes along either side of the rail corridor, which limits views. The Canalway Trail – Erie Section is located along the corridor between MPs 311 and 312. The railroad extends under the New York State Thruway (I-90) at MP 315. Approaching the Wayne County line, the railroad crosses the Seneca River/Erie Canal at MP 319.30 and then the extensive marshes within the wide floodplain of the now narrow Seneca River, adjoining the south side of Howland Island within the Northern Montezuma State Wildlife Management Area. The crossing of the Seneca River, on the other (west) side of Howland Island, forms the Wayne County line at MP 320.2.

The predominant viewshed in **Wayne County** (MPs 320 to 357) is mostly agricultural with large areas of forestland and wetlands. On the eastern end of the county, the railroad adjoins the Northern Montezuma State Wildlife Management Area (MPs 320 to 321.5). Views from the railroad include Route 31, which roughly parallels sections of the railroad, after crossing it in the village of Savannah (MP 322.5), through the eastern half of the county. The railroad also extends across the Montezuma National Wildlife Refuge (MPs 323.3 to 325.6), where views of adjoining Route 31 and, to some extent, surrounding swamp and marsh areas, are obscured by heavy forest and shrub vegetation. The landform along the railroad in the county is generally flat with some areas of moderate to steep slopes. Approaching Clyde at MP 328 and continuing west through the county (around these major drainages), the railroad encounters a region of prominent north-south oriented drumlins. These rounded, elongated ridges were formed during periods of glaciation that eroded the Allegheny Plateau – Finger Lakes Region to the south. Viewsheds include the Erie Canal, which extends in close proximity to the railroad in portions of the county, where it closely adjoins the railroad through Clyde, crosses the railroad in Lyons and again near Newark. Urban views in the villages of Savannah, Clyde, Lyons, and Newark are limited by screening by trees and the location of the railroad in the outskirts of these villages. However, views of urbanized areas along the track include the business and agricultural industrial district in and around Clyde, the rail yard and businesses and neighborhoods in Lyons, and industrial areas in Newark. Although the canal runs parallel to the railroad and alongside the Canalway Trail-Erie Canal Heritage Trail (between MPs 354.5 and 357) approaching the Monroe County line, the canal is offset by a forested buffer, which largely obscures views from the railroad.

Entering **Monroe County** (MPs 357 to 388), the railroad closely parallels the bank of the Erie Canal, to the south, extending through largely forested, undeveloped areas. Forested buffers, including several park areas, adjoin the railroad through the eastern part of the county. The railroad extends further from the canal as it continues west through increasingly urbanized areas, extending close to the canal before the two diverge. The railroad passes under the I-590 Bridge and I-490 interchange ramps near the city limits. West of the interchange, entering the city of Rochester, the viewshed becomes increasingly urban and dominated by hardscape, with parking lots, businesses, and industries closely adjoining the railroad and limited or no screening by trees. The railroad adjoins the south side of the Rochester railyard (MP 369) and continues alongside commercial and industrial areas, and south of the Rochester public market. To the west, approaching the Rochester Station (MP 371), the railroad continues above the grade of underpassing roadways and includes a tree buffer that partially screens views of the adjoining commercial/industrial areas. To the west, the railroad extends over the Genesee River (MP 371.3) just upstream (south) of the High Falls, or Upper Falls,

and downstream (north) of the Inner Loop bridge. The railroad continues through the downtown business district adjacent to the Inner Loop, passing by Frontier Field just east before passing over the I-490/Inner Loop Interchange bridges (MP 371.85), with views to the north screened to some extent by trees. The viewshed through the remainder of the city is screened to some extent by trees, but views consist of commercial and residential buildings, before crossing at the Erie Canal and the Canalway Trail-Erie Canal Heritage Trail (MP 374.5). To the west, the viewshed includes increasing areas of forested/undeveloped areas with lower density development outside of the city, continuing through industrialized areas and crossing under I-390 at MP 374.75 and under I-490 at MP 377. The viewshed in the remainder of the county is rural and forested, with low density residential uses and farmlands closer to the county line.

In **Genesee County** (MPs 388 to 418) the viewshed is primarily agricultural with smaller areas of forest and views of residential and scattered commercial/industrial uses. The eastern half has views largely of agricultural fields, although forested buffers screen views in many locations. Urban views in the county are limited as the railroad extends through the outskirts of the city of Batavia in the middle of the county, passing through several parks and recreational areas in and just outside the city limits. The railroad crosses over the New York State Thruway (I-90) at MP 399.3. The western half of the county provides viewsheds of forest and farmlands, with scattered residential and commercial buildings, and parallels Route 33 to the north, which is offset and largely screened by vegetation or buildings.

Entering **Erie County** (MPs 418 to 439/QDN1 to QDN13), the viewshed from the railroad consists primarily of agricultural and forested lands. The viewshed becomes increasingly urban in the village areas approaching the Buffalo-Depew Station (MP 431.6) and the town of Cheektowaga, where views from the railroad include adjoining Ellicott Road/Route 130, to the south, and an overhead crossing of I-90 (Governor Thomas Dewey Thruway). Approaching and passing into the city of Buffalo, the views from the railroad include industrialized areas (including the Frontier railyard and the Buffalo Terminal) and higher density neighborhoods. In the downtown area, views include commercial buildings, to the north, and the elevated Niagara Thruway (I-190) structure, on the south. At the Buffalo Exchange Street Station, interchange ramps and elevated I-190 extend overhead, and the Buffalo skyline, including Coca Cola Field and parking facilities, are visible to the north. The railroad passes under the I-190/Route 5 Interchange through a 500-foot tunnel and a 565-foot tunnel. Route 5 in this location is part of the Great Lakes Seaway Trail, a National Scenic Byway and 518-mile driving route, which extends along the Lake Erie and Niagara River waterfront. The railroad borders I-190 to the west, and views of the Black Rock Canal (segregated from Lake Erie by Bird Island Pier) are obstructed by landscaping and developments. To the north, views to the west include Lasalle Park and industrial/waterfront uses, including a Frank Lloyd Wright boathouse and marinas/boat clubs. The railroad extends northeast under the elevated I-190 highway and continues north under the Peace Bridge (MP QDN4.6), between I-190, at the edge of Black Rock Canal, and Route 266. The Great Lakes Seaway Trail follows Route 266 where it is set back from the railroad along the canal from MPs QDN4.8 to QDN6.3. Steep slopes and vegetation obscure views from the railroad in some locations of Route 266 businesses. Where slopes flatten, views from the railroad include the nearby canal, adjoining Squaw Island, and businesses on Route 266. The railroad extends inland under the I-190/Route 198 Interchange (MP QDN6.2), between a transmission line right-of-way (that extends north to MP QDN8), on the west, and industrial uses on the east. The viewshed includes industrial uses along the railroad through the remainder of the city of Buffalo and town of Tonawanda. The railroad crosses I-290 at MP QDN10.75, and extends through flat industrial areas/institutional areas at-grade passing into the outskirts of the city of Tonawanda. The railroad continues north on elevated, forested embankment through the remainder of the city, where the views consist of more densely developed residential and commercial buildings and institutions in neighborhoods adjoining

the railroad. The railroad passes over the Erie Canal/Ellicott Creek at MP QDN12.7 and the Erie Canal at a swing span bridge (MP QDN13.4).

Entering **Niagara County** (MPs QDN13 to QDN28), the railroad passes through the Gateway Park on the Erie Canal and continues on a raised forested embankment through densely developed neighborhoods in the city of North Tonawanda, and continues at-grade through less densely developed industrial areas approaching the riverfront to the north. Although the railroad extends close to the riverfront off Tonawanda Island, views of the Little River are obstructed by industrial buildings. Continuing north, the views from the railroad include industries and more densely developed neighborhoods on the east. Where the railroad extends alongside Routes 265/384 (River Road) and Gratwick Riverside Park (MP QDN15.7), the Niagara River is visible, and lands on the east side become more sparsely developed, transitioning to farmlands and forestlands at the outskirts of the city. The Great Lakes Seaway Trail follows River Road where it closely adjoins the railroad in this area (MPs QDN15.5 to QDN16.8). To the north, outside the city limits, views of the riverfront are obscured by forest vegetation and residences, and the railroad turns north, with viewsheds predominantly consisting of agricultural and forestlands, with scattered residences and businesses visible from the tracks, as the railroad extends north through the rural/suburban areas between the major metropolitan areas. Approaching the city of Niagara Falls, the viewshed becomes more urban. The railroad crosses under I-190 near a transmission line right-of-way in the vicinity of a tow lot and trailer/industrial storage yard, and then extends north of the Niagara Falls yard to the Niagara Falls Station (MP QDN27).

Views from the Railroad: 125 Study Area

In **Rensselaer County** (MPs QH142 to QH143), Alternative 125 would follow along the existing the Empire Corridor north to the Albany-Rensselaer Station, then would continue south to a new crossing of the Hudson River. The views along this mile would be largely residential and industrial, along with the views of the Hudson River to the west.

In **Albany County** (MPs QH143 to QH157), the 125 Study Area extends through industrialized waterfront, then would follow interstate highways between MP QH144, at the I-787 convergence with the New York State Thruway (I-87) (to MP QH145), and MP QH157 at the Schenectady County line. The majority of the areas adjoining the highway consist of forested, undeveloped areas, particularly south of the interstate highway, with urban development clustered at interchanges. The New York State Thruway and I-787 extend through the outskirts of the city of Albany, forming a dividing line between the urban areas of the city, on the north, and largely undeveloped areas and parks on the south, including Albany Pine Bush State Unique Area and a golf course. The viewshed along the highway is heavily buffered by forest along the majority of the highway right-of-way, and the median along the New York State Thruway consists of grass and becomes wide and forested in many locations, particularly on the west end of the county. Views of adjoining properties are limited, but adjoining buildings and urban areas are more visible within the city of Albany, on the east end of the county.

Entering **Schenectady County** (MPs QH157 to QH174), the 125 Study Area continues to follow the New York State Thruway (I-90) to MP QH159. The corridor extends north of I-90 alongside industrial and residential areas, passing along the outskirts of the more urbanized area in the town of Rotterdam, crossing west again across I-90 and I-88 between MPs QH161 and QH162. To the west, the 125 Study Area extends through primarily undeveloped forested or farmlands, extending across only six low-density development roads in the seven miles until the corridor approaches and extends

across U.S. Route 20. The corridor parallels the highway to the south, and extending across crossroads that intersect the highway to the north, crossing into Schoharie County at Schoharie Creek.

In **Schoharie County** (MPs QH174 to QH180.7), the corridor continues adjacent to, and south of, U.S. Route 20, a New York State scenic byway, over a distance of approximately 8.5 miles, crossing northwest across the highway at MP QH177.5. The corridor extends through primarily forested and agricultural lands, with scattered developments close to crossing roads. West of MP QH178, where the corridor crosses Routes 162/30A and an intersecting road, north of U.S. Route 20, the corridor crosses only two more crossroads where it extends west to the county line, passing primarily through forested, undeveloped lands.

In **Montgomery County** (MPs QH180.7 to QH202), the 125 Study Area extends through predominantly rural agricultural and forested areas that bypass urban areas and villages. The corridor crosses 19 through roads, of which only five are state highway routes, and viewsheds of buildings are largely restricted to development along these crossroads. However, many buildings may be shielded from view by forest and vegetated buffers. Forested areas are more prominent on the eastern part of the county, and the viewsheds in the western half consist primarily of farmlands.

In **Herkimer County** (MPs QH202 to QH227.3), the viewsheds consist predominantly of rural agricultural and forestlands, where the corridor crosses the northernmost portion of the county. The majority of urban views (cross streets and buildings) are in the central portion of the county, where the corridor crosses the southern outskirts of the village of Ilion. The corridor crosses approximately 23 through roads, of which seven are numbered state routes.

The 125 Study Area would provide views of primarily rural agricultural and forested lands in **Oneida County** (MPs QH227.3 to QH249.3). The corridor would cross 28 through roads, of which nine are state routes. The corridor extends through the outskirts of the city of Sherrill on the western end of the county.

In **Madison County** (MPs QH249.3 to QH264), the corridor would provide views of largely rural forested and agricultural lands, passing through relatively undeveloped lands on the outskirts of the city of Oneida. The buildings and developments are largely restricted to the seventeen through roads, including two state routes, that the corridor would cross. The corridor would also cross through the Old Erie Canal/Erie Canal State Park at MPs QH 260.1 and QH262.3.

In **Onondaga County** (MPs QH264 to QH295.6), the 125 Study Area provides views of primarily agricultural and forested areas where it extends through the eastern part of the county, rejoining the 90/110 Study Area (MP 283) at MP QH268.7, on the south side of the rail yard. Views of buildings and development are limited largely to the five through streets crossed by the corridor. The corridor passes over the Old Erie Canal/Erie Canal State Park at MP QH265.8. The 125 Study Area follows the 90/110 Study Area through downtown Syracuse, as described in the previous section. Just east of the Camillus Airport, the 125 Study Area deviates from the 90/110 Study Area (MP 297.5) to the northwest (at MP QH284), extending through primarily rural agricultural and forested lands, with development largely restricted to the 14 through roads and one state highway that the corridor would cross. The corridor would also cross the New York State Thruway (I-90) at MP QH286.2.

In **Cayuga County** (MPs QH295.6 to QH306.6), the viewshed consists primarily of rural agricultural and forested lands, with development largely limited to buildings on the 13 through roads and two state highways.

In **Wayne County** (MPs QH306.6 to QH342), the corridor crosses the Erie Canal/Seneca River at the eastern county line. The viewsheds in the county consist largely of farm or forestlands through this rural landscape. Development is very low-density, and views of buildings would largely be restricted to the 47 local roads and 7 state highways crossed by the corridor.

In **Monroe County** (MPs QH342 to QH371.6), the 125 Study Area extends through primarily residential neighborhoods, crossing Route 31F, which is fronted by commercial uses before rejoining the 90/110 Study Area (MP 360.8) at MP QH345.25 near the Fairport Village line and following the railroad to MP QH361. The viewsheds consist largely of rural agricultural or forestland, with buildings primarily located along the 15 roads, and 2 state highways along the corridor. The 125 Study Area diverges from the 90/110 Study Area (MP 376.5) just east of the I-490 crossing west of the city of Rochester. The corridor crosses through more urban/industrial viewsheds closer to the interstate, but extends through largely forested viewsheds, with more rural agricultural lands to the west. Residential developments and buildings are more visible along the five state highways and the six through roads, although the corridor extends through or near other residential developments.

In **Genesee County** (MPs QH371.6 to QH401.4), the viewsheds consist primarily of rural agricultural and forested rural landscapes. Views of buildings and development are largely restricted to the 23 through roads crossed by the corridor and the five state highways.

In **Erie County** (MPs QH401.4 to QH426), the viewsheds consist of rural agricultural and forested landscape, extending through one trailer park and becoming more residential to the west. Where the 125 Study Area turns south, crossing the New York State Thruway at MP QH410.5, views of more urban, commercial/industrial areas are more prominent along Route 31 and where the corridor merges with the 90/110 Study Area (MP 427) at MP QH413.

16.2 Environmental Consequences

Chapter 4 of the Tier 1 Final EIS addresses and compares the impacts of the Preferred Alternative, Alternative 90B, to those of the other alternatives considered (refer to Section 4.17). The potential effects of the Base Alternative and the other Build Alternatives are described in more detail below.

16.2.1 Base Alternative

The Base Alternative will maintain weekday service frequencies. Because proposed work with this alternative were anticipated to be located entirely within the right-of-way, no substantial changes to views from or to the railroad were anticipated. The Tier 1 Draft EIS addressed the potential visual impacts of the eight projects included in the Base Alternative.

16.2.2 Alternative 90A

It is anticipated that work will be contained within the right-of-way, and, for the most part, for track and signal improvements, no significant changes in the visual appearance of railroad facilities, or views from the railroad, are anticipated. There are six Scenic Areas of Statewide Significance in the vicinity of Alternative 90A improvements. As described in detail under Section 4.11.4 (“Coastal Resources”), no changes in the visual quality of these SASSs would occur as a result of Alternative 90A.

New station buildings would be constructed at Amsterdam and Buffalo-Depew stations. These station improvements proposed under Alternative 90A are anticipated to improve the appearance of these facilities. Replacement of the Livingston Avenue Bridge may also change the appearance of this crossing, depending on the configuration of the improved historic rail bridge.

16.2.3 Alternative 110

Empire Corridor South

No additional work within Empire Corridor South, other than that proposed for Alternative 90A, are proposed, and additional parkland impacts are not anticipated to occur.

Empire Corridor West/Niagara Branch

Similar to Alternative 90B, the additional track improvements would involve a nominal change in the appearance of the railroad, where areas of third and fourth tracks are proposed to be added, as an additional third or fourth track will likely not be highly visible. In many locations, the tracks are not visible from adjoining properties or vantage points, unless the trains are running on them, or the right-of-way is screened by vegetation, buildings, or slopes. The views from the tracks should not change markedly with the proposed improvements. However, the additional tracks may involve clearing of forest, or property changes/impacts, which may change views to and from the tracks. Compared to Alternative 90A, Alternative 110 would involve third tracks that would be offset an additional 15 feet from the existing tracks, for a total offset of 30 feet, so Alternative 110 may involve additional clearing and property impacts and may be more visible than Alternative 90B. There would also be more frequent service than for the Base Alternative (although the same frequency of service as Alternative 90B) and trains running on the new tracks would be closer to adjoining properties. Alternative 110 would also involve a greater length of fourth track, compared to Alternative 90A. In addition, Alternative 110 would involve more modifications to some bridges than Alternative 90A, which could involve nominal changes in the appearance of the affected crossings.

The Revolutionary Trail Scenic Byway (Route 5/29) extends alongside the length of the Empire Corridor and the Mohawk River/Erie Canal from Route 5 in Schenectady County to Herkimer, then follows Route 5S and the Erie Canal to Utica and continues northwest along Route 49 and the Erie Canal to Rome in Oneida County. Portions of Route 5 would need to be relocated, however, the scenic qualities of the byway would not be affected by Alternative 110.

Alternative 110 proposes two flyovers along the corridor, at MP 279 and MP 366 (same as the ones proposed in 90B). The first flyover (MP 279) would extend through lightly forested and rural agricultural land, with scattered residences set back at least 500 feet and an at-grade road crossing set back 700 feet. Currently it is not known how tall or extensive the flyovers will be, but this would introduce a new visual element that may not be visible from the closest houses, depending on the lateral and vertical extent of the structure.

Lightly forested land surrounds the proposed location for the second flyover (MP 366), with residential areas just a few hundred feet southwest of the existing railroad and parkland to the north. This flyover will be situated north of the I-490 & 441 interchange. Depending on the height of the flyover, the flyover may be visible from residential areas and the adjoining parkland, and would introduce a new visual element that would be more prominent than the at-grade railroad.

16.2.4 Alternative 125

Empire Corridor South

No new improvements, beyond what is proposed for Alternative 90A, would be proposed for Alternative 125 along the majority of Empire Corridor South. However, roughly one mile of the proposed 125 mph track would extend south from Albany-Rensselaer Station to cross the Hudson River. This would introduce a new visual element and a new crossing of the Hudson River, but the area affected is primarily industrial or undeveloped.

Empire Corridor West/Niagara Branch

Alternative 125 also would include new right-of-way in most areas, but would merge back with the Empire Corridor over two 15- and 16-mile segments centered on Syracuse and Rochester, respectively, and along the section approaching Buffalo Exchange Street. In these sections, the track would be elevated. Alternative 125 would be an electrified corridor between Albany and Buffalo, with overhead catenary, which may be more visible from adjoining properties and roads.

This route covers 126 miles on new alignment between Rensselaer County and a point 8.5 miles east of Syracuse Station. Alternative 125 extends through urban areas in Albany and Schenectady Counties over a distance of 20 miles, following the New York State Thruway (I-87/I-90) over most of this distance. Along five areas of Alternative 125, covering a total of 66 miles, it is assumed that grade separation will be achieved by elevating the tracks above the existing grade on a combination of embankment and elevated structures. For estimating purposes, it is assumed that 37.5 miles of viaduct structure will be required to achieve grade separation. Included in the five areas is a stretch of corridor that will likely have grade separated structures to traverse the local terrain, but it is not yet known where, only that they will exist. These elevated portions of the corridor would likely represent new visual elements that would be more prominent to adjoining uses.

Alternative 125 would introduce a new visual element where the route would extend on a new alignment. In these locations, it would have a more substantial visual effect than Alternatives 90B and 110, which would involve improvements to the existing railroad. However, the majority of the areas traversed are rural and agricultural, and the views of the new facility would be limited largely to adjoining properties or crossroads, which are described under “Existing Conditions.” As is the case for the existing railroad, views of and from the tracks may be screened to some degree by trees and vegetated buffers. Although the tracks themselves may not be visible from adjoining properties, depending on the degree of screening and slopes and adjoining development, unless trains are running on the tracks, the overhead catenary may be more visually prominent.

As described under “Existing Conditions,” the new alignment for the Alternative 125 would involve far fewer crossings of interstate highways and the New York State Canal System or urban areas than the existing railroad. New bridges that may be required to carry the railroad over/under roadways may be more prominent visually, and new bridges over rivers/canals would introduce a new river crossing that may be more visible than the tracks at-grade.

Alternative 125 mph would cross and extend alongside an 8.5-mile section of the U.S. Route 20 Scenic Byway, a National Scenic Byway, in Schenectady and Schoharie Counties. This would introduce a new visual element to the byway, but would affect a very small proportion of the entire 108-mile driving route.

The following section describes the five general locations where elevated sections would be required for Alternative 125. Where the alignment rejoins the Empire Corridor, most of the areas consist of more densely populated and urban areas, and Alternative 125 would be elevated above the existing tracks. Overhead catenary along this electrified corridor will be particularly visible in these sections.

The easternmost elevated section along the Alternative 125 extends between the City of Rensselaer (MP QH142) and MP QH162 in Schenectady County. Along this 20-mile section, it is assumed that grade separation will be achieved by elevating the tracks above the existing grade on a combination of embankment and elevated structures. For estimating purposes, it is assumed that ten miles of viaduct structure will be required to achieve grade separation. These viaduct sections are assumed to be about 20 feet above existing grade. The heights of the non-structurally elevated sections are currently unknown, but the elevated section will be more visible from adjoining areas. In Rensselaer County (MPs QH42 to QH143), Alternative 125 would follow along the existing corridor centerline, but would be elevated. The elevated section along this mile would extend adjacent to residential and industrial uses, and Alternative 125 would cross industrial lands, where it extends towards the Hudson River on a new alignment. In Albany County (MPs QH143 to QH157), Alternative 125 would extend through industrialized waterfront, then would follow interstate highways between MP QH144, at the I-787 convergence with the New York State Thruway (I-87) (to MP QH145), and QH157 at the Schenectady county line.

The elevated section of Alternative 125 will introduce a new visual element, however, most of the section extends along the median of the New York State Thruway (I-90/I-87), which is buffered by trees and has a wide median and right-of-way through the majority of this area. The last five miles extend into Schenectady County and outside the highway right-of-way, extending alongside I-90 to just west of the I-90 and I-88 interchange. Over the last three miles, the railroad will cross over and extend outside of the Thruway right-of-way, crossing through or adjacent to several residential neighborhoods, but also extending through undeveloped or commercial land uses.

Between Schenectady County (MP 165) and Syracuse, because of grade differences of the terrain, intermittent viaduct or elevated structures may be required, although these have not been identified in Tier 1. Since these structures are to span over local terrain, it is likely that they will not be in urban areas and are likely to be in more undeveloped or even industrial and residential areas.

The third elevated section is between MPs QH268 to QH288 in Onondaga County and primarily runs along the existing Empire Corridor, where it extends through the City of Syracuse. This entire distance will likely be completely grade separated on viaduct or column structures, with 10 miles of elevated sections assumed on either side of the Syracuse Station. The railroad extends through rural agricultural and residential areas outside of the city and extends through increasingly urbanized and industrial/commercial areas in and around the City of Syracuse. The views along this section are largely residential and commercial, and would likely be more visible from the grade separated corridor than the current at-grade centerline. This would introduce a new visual element that would be more prominent in this urban area.

The fourth elevated section is where Alternative 125 rejoins the Empire Corridor and extends through the City of Rochester in Monroe County between MPs QH345 to QH361. Approximately ten miles around the Rochester station-stop were assumed to be completely grade separated on viaduct or column structures, about 20 feet above existing grade. The other six miles were assumed to be on embankment, the heights of which are currently unknown. The elevated section starts where Alternative 125 rejoins the Empire Corridor (90/110 Study Area) at MP QH345.25 near the Fairport

Village line. This elevated section would extend through increasingly urban areas entering the City of Rochester, where the viewshed is dominated by built up areas, and the railroad adjoins parking lots, businesses, and industries with limited or no screening by trees. Alternative 125 will be more visible on the elevated tracks than the existing at-grade corridor, but adjoining areas are predominantly commercial or industrial uses or institutional uses.

The fifth elevated section is between MPs QH420 to QH425, entirely along the last five miles of the Empire Corridor where it approaches the Buffalo Exchange Street Station. This section will be elevated on completely grade separated viaduct or column structures and will introduce a new visual element that will be more visible than the current at-grade railroad. This section extends through heavily urbanized, industrialized areas (including the Frontier railyard and the Buffalo Terminal) that include higher density neighborhoods. In the downtown area, this elevated section would extend between commercial buildings on Exchange Street, to the north, and the elevated Niagara Thruway (I-190) structure, on the south. In this area, the elevated structure would mirror the adjoining Thruway bridge and would be less prominent.

17. Farmlands

17.1 Existing Conditions

17.1.1 Empire Corridor South

The Empire Corridor South extending north from (and including) New York through the Hudson Valley to Rensselaer County includes three urbanized counties. All of the Build Alternatives follow the existing Empire Corridor South for the majority of its length, deviating only in Rensselaer County, where Alternative 125 splits off 1.6 miles south of where the existing Empire Corridor turns to the west. The study area within the seven counties of Empire Corridor South contains 405 acres of prime farmland (31 additional acres of prime farmland if drained), 393 acres of farmland of statewide importance, and 387 acres of Agricultural Districts.

The study area within New York, Bronx, and Westchester Counties is urbanized as defined by the U.S. Census Bureau and therefore, by definition does not contain federally protected prime farmland. There are also no prime farmland soils mapped in New York and the Bronx, and there are 59 acres mapped in **Westchester County**, but these do not meet the federal definition of protected prime farmland since Westchester County is within a Census-defined urbanized area. There are no Agricultural Districts within these three urbanized counties.

Putnam County is not defined as an urbanized area, but the portion of the county within the study area contains only 9 acres of prime farmland, one acre of prime farmland if drained, and one acre of farmland of statewide importance. There are no Agricultural Districts in the study area in Putnam County.

More than half of **Dutchess County** in the study area is within a Census-defined urbanized area, and the remaining areas contain 120 acres of prime farmland, 21 acres of prime farmland if drained, and 233 acres of farmland of statewide importance. Dutchess County also has 112 acres within state-designated Agricultural Districts. About one-third of Columbia County within the study area is an urbanized area, and most of the mapped farmland soils are situated outside the urbanized area. In **Columbia County**, there are 69 acres of prime farmland (7 acres of prime farmland if drained), 102 acres of farmland of statewide importance, and 148 acres within Agricultural Districts.

Roughly half of the study area in **Rensselaer County** is within an urbanized area where the 90/110 and 125 Study Areas diverge, and the remaining area contains 148 acres of prime farmland, and 17 acres of farmland of statewide importance. There are 126 acres within Agricultural Districts in Rensselaer County.

17.1.2 Empire Corridor West/Niagara Branch: 90/110 Study Area

The Empire Corridor West and Niagara Branch extending west of (and including) Albany to Niagara Falls includes large tracts of agricultural land within the 600-foot-wide study area. The study area in the thirteen counties contains a total of 3,610 acres of prime farmland, an additional 1,952 acres of prime farmland if drained, and 1,647 acres of farmland of statewide importance. Approximately 3,280 acres of the study area between (and including) Albany County and Niagara County are within state-designated Agricultural Districts.

Albany County is within an urbanized area; however, there are 8 acres of prime farmland and 26 acres of farmland of statewide importance within this county. There are no Agricultural Districts in the study area within Albany County.

Most of **Schenectady County** lies within an urbanized area, and the remaining areas contain 163 acres of prime farmland, and 39 acres of farmland of statewide importance. There are 12 acres within Agricultural Districts in the study area in Schenectady County. The study area in **Montgomery County** is primarily rural and contains 484 acres of prime farmland (an additional 6 acres if drained) and 88 acres of farmland of statewide importance. Within Montgomery County, approximately 610 acres are within Agricultural Districts. **Herkimer County** has urbanized areas that follow the rail corridor, and contains 328 acres of prime farmland, 4 acres of prime farmland if drained, 19 acres of farmland of statewide importance, and 159 acres are within Agricultural Districts.

More than two-thirds of the rail corridor in **Oneida County** consists of urbanized areas around the cities of Utica and Rome. The remainder of the Oneida County within the study area contains 295 acres of prime farmland, 270 acres of prime farmland if drained, and 87 acres of farmland of statewide importance. The area within 300 feet of the corridor centerline in Oneida County contains 24 acres within Agricultural Districts. Approximately half of the rail corridor in **Madison County** consists of urbanized areas within the city of Oneida, but the remainder contains 133 acres of prime farmland (an additional 193 acres of prime farmland if drained), and 154 acres of farmland of statewide importance. The study area in Madison County contains 132 acres within Agricultural Districts.

Almost half of the study area in **Onondaga County** consists of urbanized areas surrounding the city of Syracuse, but the remaining area contains 351 acres of prime farmland, 256 acres of prime farmland if drained, and 169 acres of farmland of statewide importance, for a total of 776 acres of farmland. There are 39 acres within Agricultural Districts within the county. **Cayuga County** is predominantly rural and agricultural. The study area within Cayuga County contains 266 acres of prime farmland, 24 acres of prime farmland if drained, 284 acres of farmland of statewide importance, and 223 acres within Agricultural Districts.

Wayne County is primarily rural and agricultural, with 609 acres of prime farmland, 138 acres of prime farmland if drained, and 268 acres of farmland of statewide importance. The county contains

1,004 acres within Agricultural Districts.

Most of **Monroe County** within the study area consists of urbanized areas surrounding the city of Rochester, but the remaining area contain 155 acres of prime farmland, 214 acres of prime farmland if drained, and 33 acres of farmland of statewide importance. The areas within 300 feet of the corridor centerline in Monroe County include 118 acres within Agricultural Districts.

Genesee County within the study area is primarily rural and agricultural and areas within 300 feet of the corridor centerline contain 755 acres of prime farmland, 463 acres of prime farmland if drained, and 338 acres of farmland of statewide importance. There are 650 acres within Agricultural Districts within the study area in Genesee County.

Most of **Erie County** within the study area consists of urban areas surrounding the cities of Buffalo, Tonawanda, and Niagara Falls, but the remainder of the study area within the county contains 60 acres of prime farmland, 332 acres of prime farmland if drained, and 133 acres of farmland of statewide importance. There are 225 acres within Agricultural Districts within the study area in Erie County. All of **Niagara County** along the remainder of the Niagara Branch consists of urbanized area, although there are 3 acres of prime farmland, 52 acres of prime farmland if drained, and 9 acres of farmland of statewide importance within the 600-foot wide study area. There are also 84 acres within Agricultural Districts in Niagara County.

17.1.3 Empire Corridor West/Niagara Branch: 125 Study Area

The 125 Study Area follows a more direct route between Rensselaer and Buffalo, which bypasses several of the major metropolitan areas and stations sites (Schenectady, Amsterdam, Utica, and Rome) along the Empire Corridor West and extends through more rural and agricultural areas. Within the 600-foot wide study area of the 125 Study Area in the Empire Corridor West/Niagara Branch, there are fourteen counties containing a total of 5,139 acres of prime farmland, an additional 3,346 acres of prime farmland if drained, and 3,076 acres of farmland of statewide importance. Approximately 7,779 acres of the study area between (and including) Albany County and Niagara County are within state-designated Agricultural Districts.

As noted above, **Albany County** is within an urbanized area. However, there are 64 acres of prime farmland and 89 acres of farmland of statewide importance in this county within the 125 Study Area. Albany County does not include any Agricultural Districts within the 125 Study Area.

The 125 Study Area follows a more southerly, rural route through **Schenectady County**, with the exception of the eastern third of the route, which lies within an urbanized area. The remaining areas contain 56 acres of prime farmland (an additional 403 acres if drained), and 263 acres of farmland of statewide importance. There are 159 acres within Agricultural Districts within the 125 Study Area in Schenectady County.

The 125 Study Area passes through **Schoharie County**. The study area in the county contains 132 acres of prime farmland (an additional 104 acres if drained), and 79 acres of farmland of statewide importance. Within Schoharie County, approximately 25 acres are within agricultural districts.

The study area in Montgomery and Herkimer counties bypasses urban areas along the Empire Corridor in Amsterdam and Herkimer and other communities that developed along the railroad. The study area in **Montgomery County** is primarily rural and contains 56 acres of prime farmland (an additional 770 acres if drained) and 488 acres of farmland of statewide importance. Within

Montgomery County, approximately 1,078 acres are within Agricultural Districts. **Herkimer County** along the 125 mph rail corridor is predominantly rural, and contains 216 acres of prime farmland (an additional 286 acres if drained), 460 acres of farmland of statewide importance, and 82 acres of Agricultural Districts.

The 125 Study Area bypasses the cities of Utica and Rome, although the eastern half of the study area extends through urbanized areas to the south of these cities. The remainder of **Oneida County** within the study area contains 827 acres of prime farmland, 357 acres of prime farmland if drained, and 111 acres of farmland of statewide importance. The area within 300 feet of the 125 Study Area corridor centerline in Oneida County contains 374 acres within Agricultural Districts.

Although the 125 Study Area bypasses the city of Oneida, almost half of the rail corridor in **Madison County** consists of urbanized areas surrounding the city. The remainder of the county contains 244 acres of prime farmland (an additional 60 acres of prime farmland if drained), and 335 acres of farmland of statewide importance. The study area in Madison County contains 366 acres within Agricultural Districts.

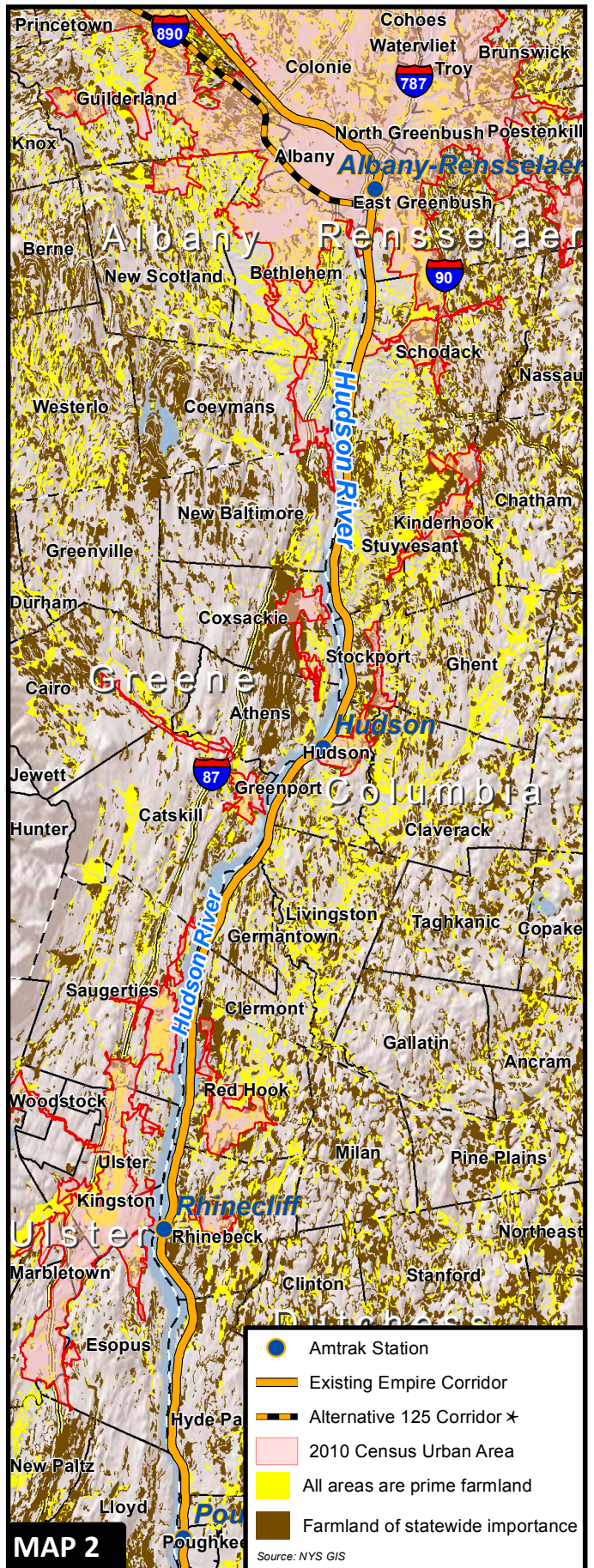
The 125 Study Area parallels and merges with the Empire Corridor West in **Onondaga County** through the Syracuse area. Almost half of the study area in Onondaga County consists of urbanized areas surrounding the city of Syracuse, but the remaining area contains 473 acres of prime farmland, 140 acres of prime farmland if drained, and 319 acres of farmland of statewide importance, for a total of 932 acres of farmland. There are 464 acres within Agricultural Districts within the county.

The 125 Study Area takes a more northerly route bypassing the existing railroad corridor through Cayuga and Wayne counties. Cayuga and Wayne counties are predominantly rural and agricultural. The 125 mph study area within the **Cayuga County** contains 362 acres of prime farmland, 90 acres of prime farmland if drained, 160 acres of farmland of statewide importance, and 806 acres within Agricultural Districts. The study area in **Wayne County** contains 1,246 acres of prime farmland, 298 acres of prime farmland if drained, and 271 acres of farmland of statewide importance. The county contains 2,214 acres within Agricultural Districts.

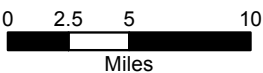
The 125 Study Area bypasses the Empire Corridor West to the north and merges with the existing rail corridor through the Rochester area, before splitting off to the north again on the west end of the county. Most of **Monroe County** within the study area consists of urbanized areas surrounding the city of Rochester, but the remaining area contains 215 acres of prime farmland, 76 acres of prime farmland if drained, and 43 acres of farmland of statewide importance. The areas within 300 feet of the 125 mph corridor centerline in Monroe County include 267 acres within Agricultural Districts.

The 125 Study Area extends on a more northerly route through **Genesee County**, bypassing an urban area in Batavia. Genesee County within the 125 mph study area is primarily rural and agricultural and areas within 300 feet of the 125 mph corridor centerline contain 1,002 acres of prime farmland, 427 acres of prime farmland if drained, and 369 acres of farmland of statewide importance. There are 1,476 acres within Agricultural Districts within the 125 mph study area in Genesee County.

The 125 Study Area turns south to merge with the Empire Corridor West five miles east of the Buffalo-Depew Station in eastern Erie County. Most of **Erie County** within the study area consists of urban areas surrounding the cities of Buffalo, Tonawanda, and Niagara Falls, but the remainder of the 125 mph study area within the county contains 243 acres of prime farmland, 283 acres of prime farmland if drained, and 80 acres of farmland of statewide importance. There are 384 acres within



*Alt. 125 as shown is a potential corridor used to analyze the potential operating characteristics, environmental impacts and cost for this speed (125 mph) threshold.

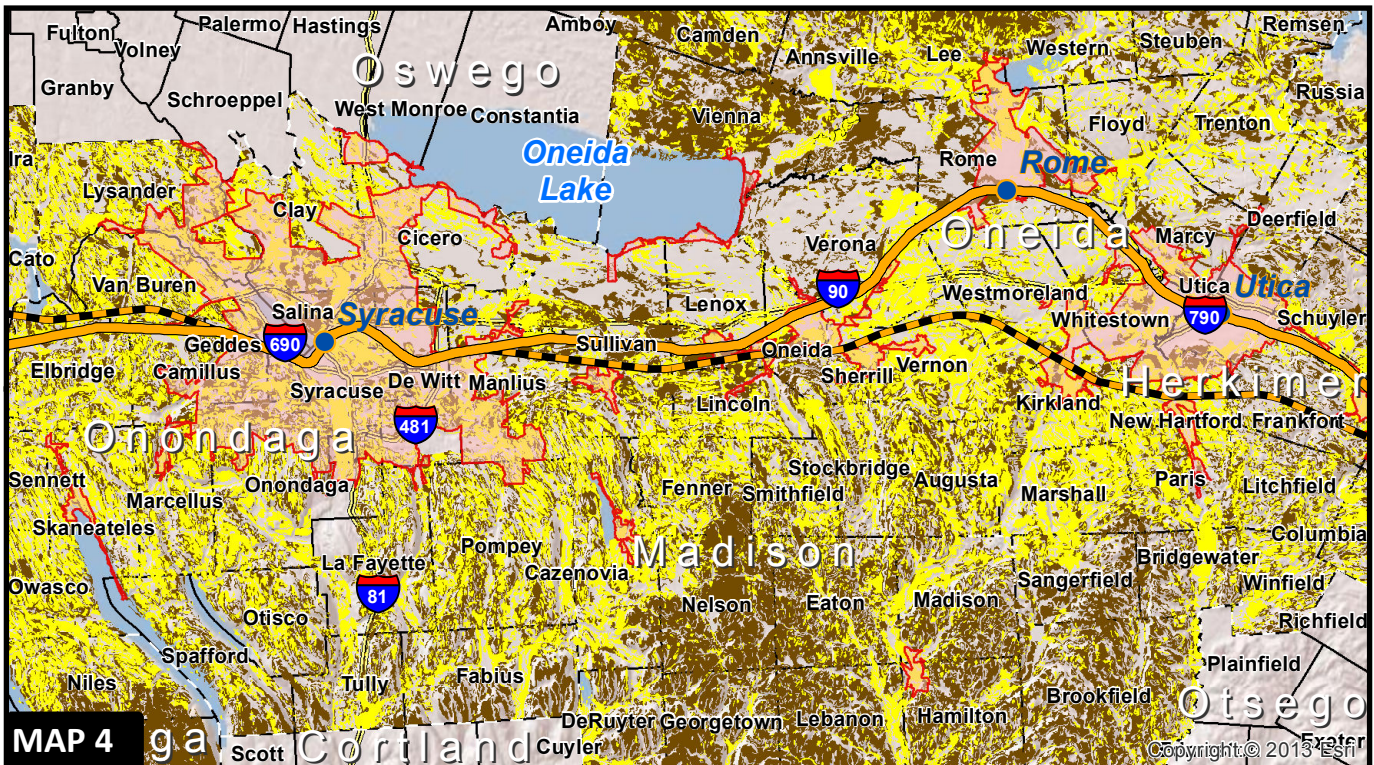
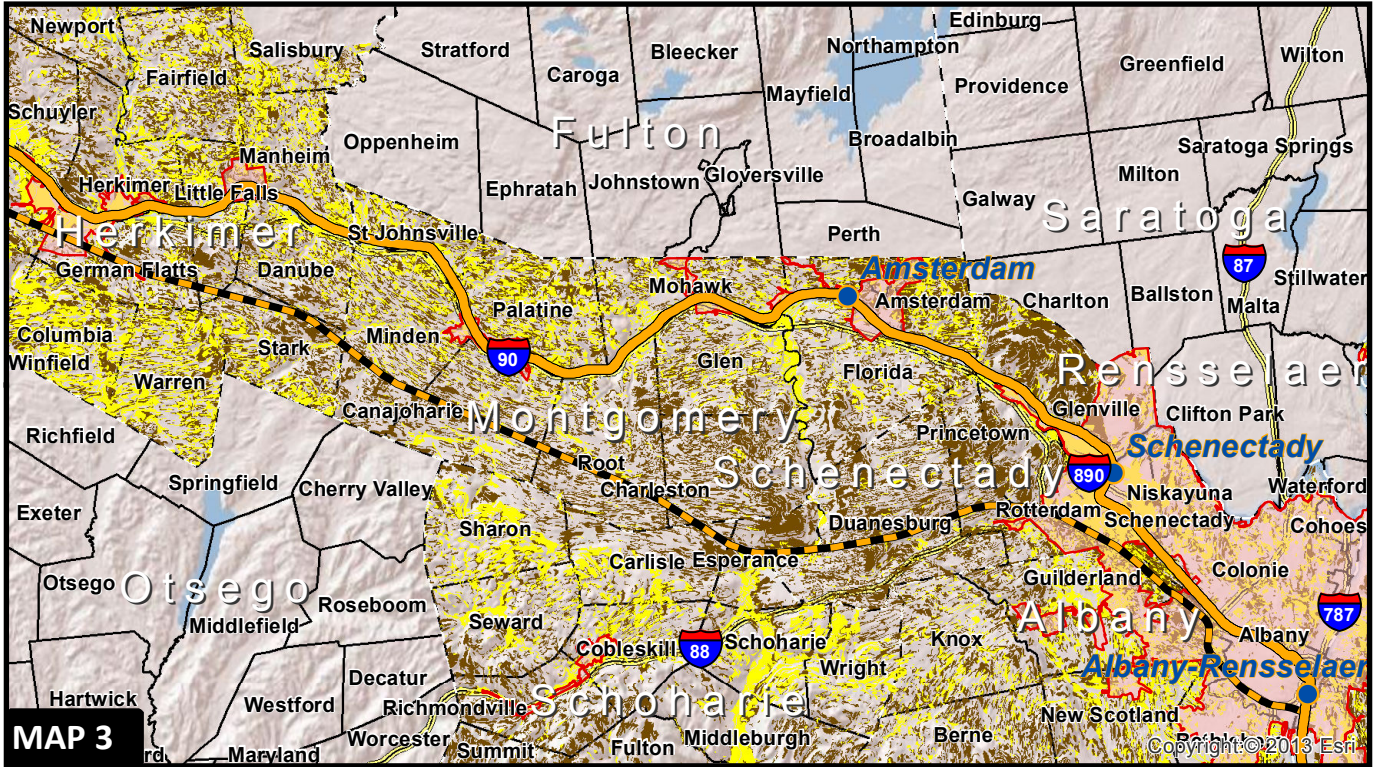
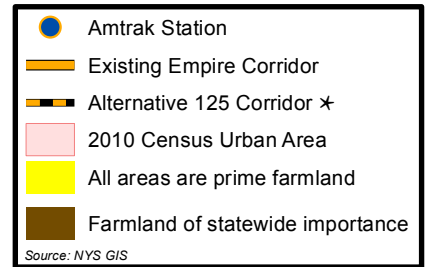
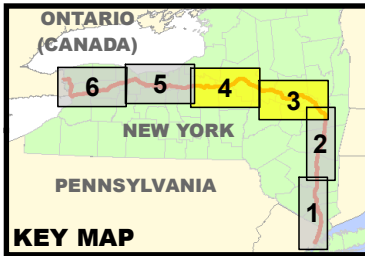


Farmland Map

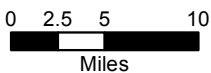
Exhibit G-33

Tier 1 EIS
High Speed Rail
Empire Corridor Program





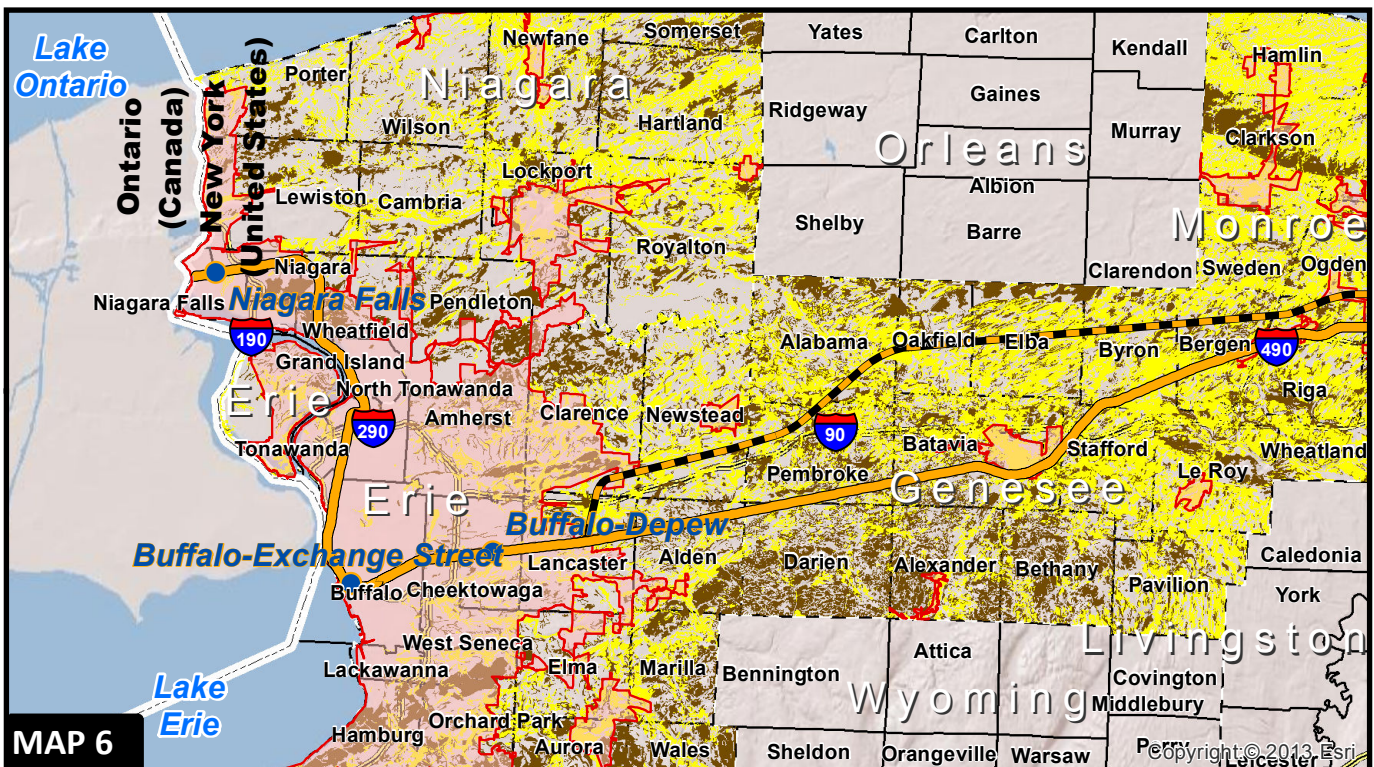
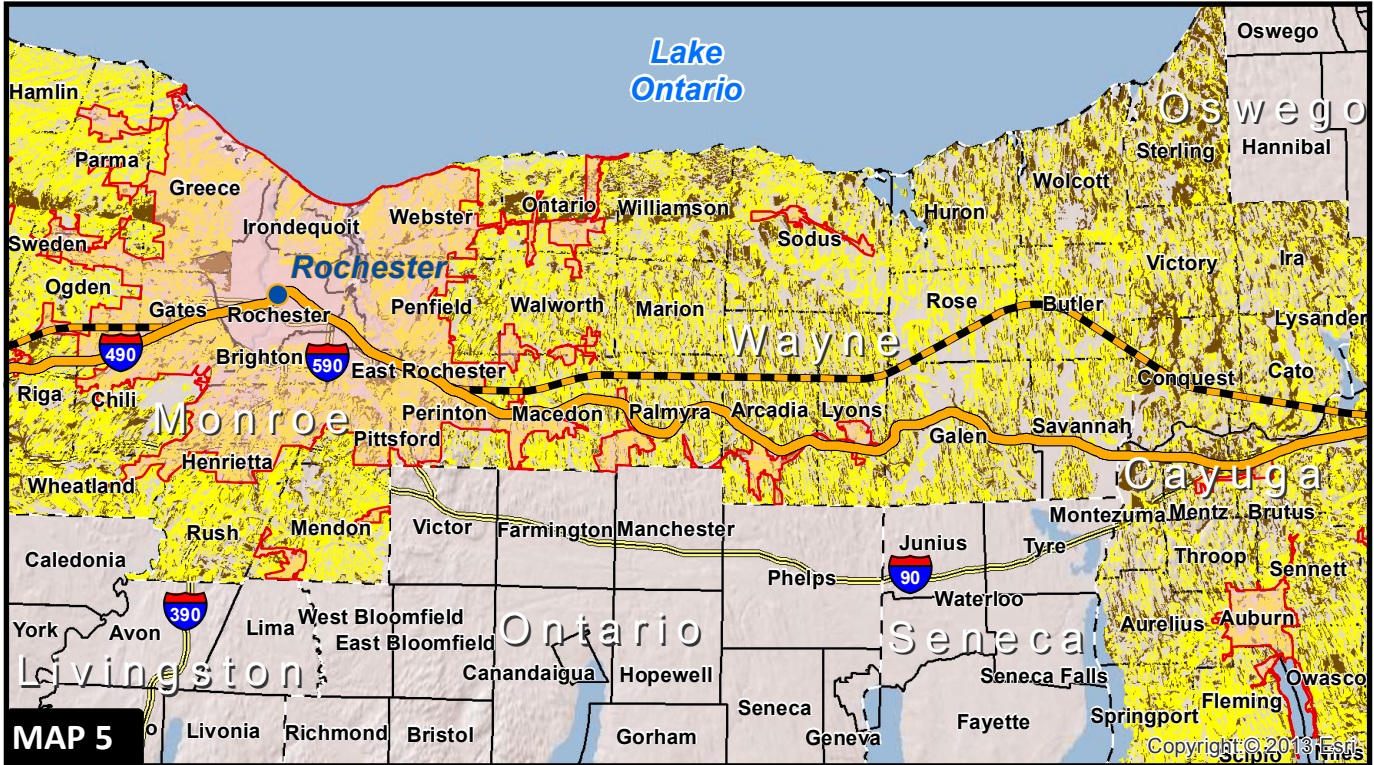
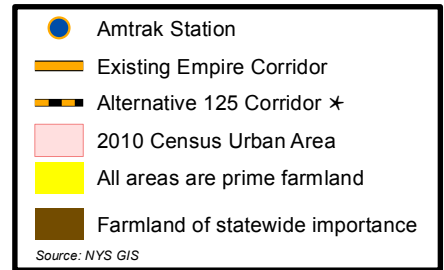
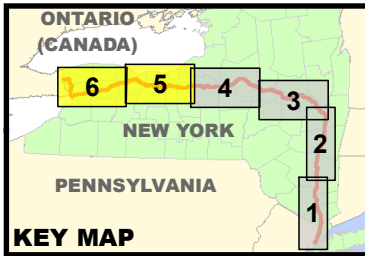
★Alt. 125 as shown is a potential corridor used to analyze the potential operating characteristics, environmental impacts and cost for this speed (125 mph) threshold.



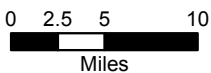
Farmland Map Exhibit G-33

Tier 1 EIS
High Speed Rail
Empire Corridor Program





*Alt. 125 as shown is a potential corridor used to analyze the potential operating characteristics, environmental impacts and cost for this speed (125 mph) threshold.

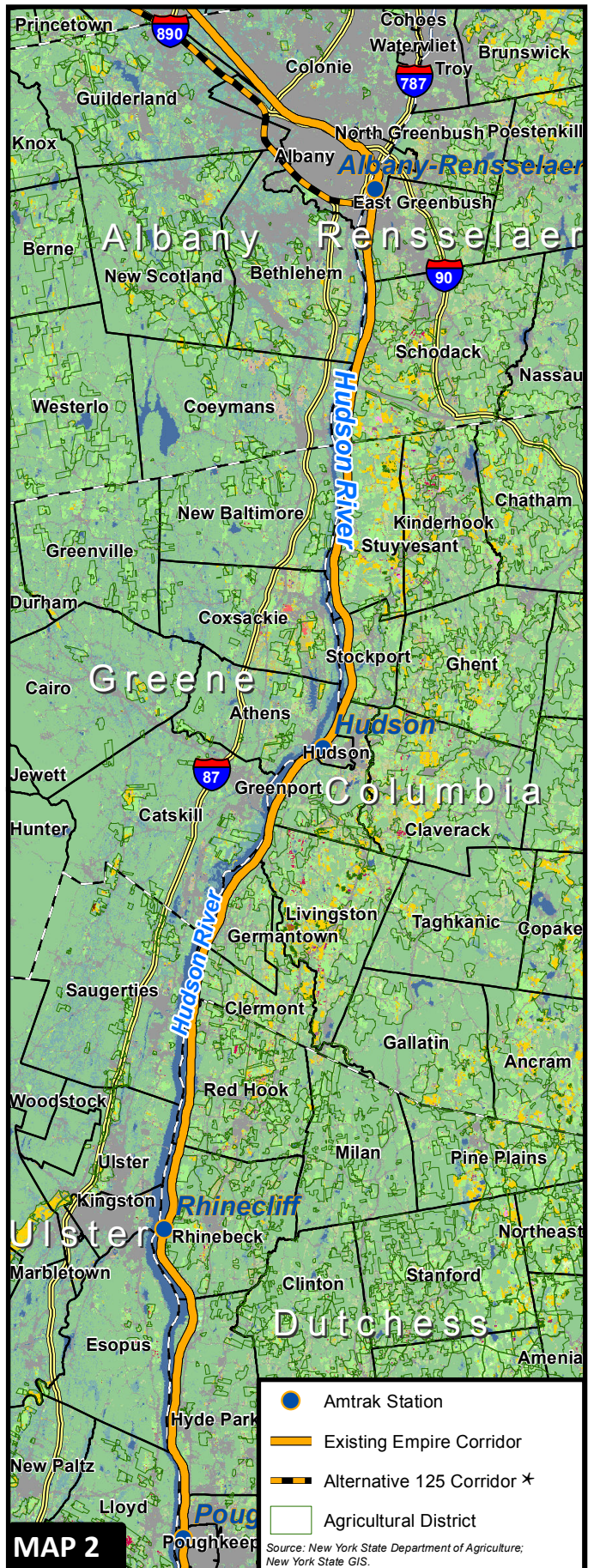
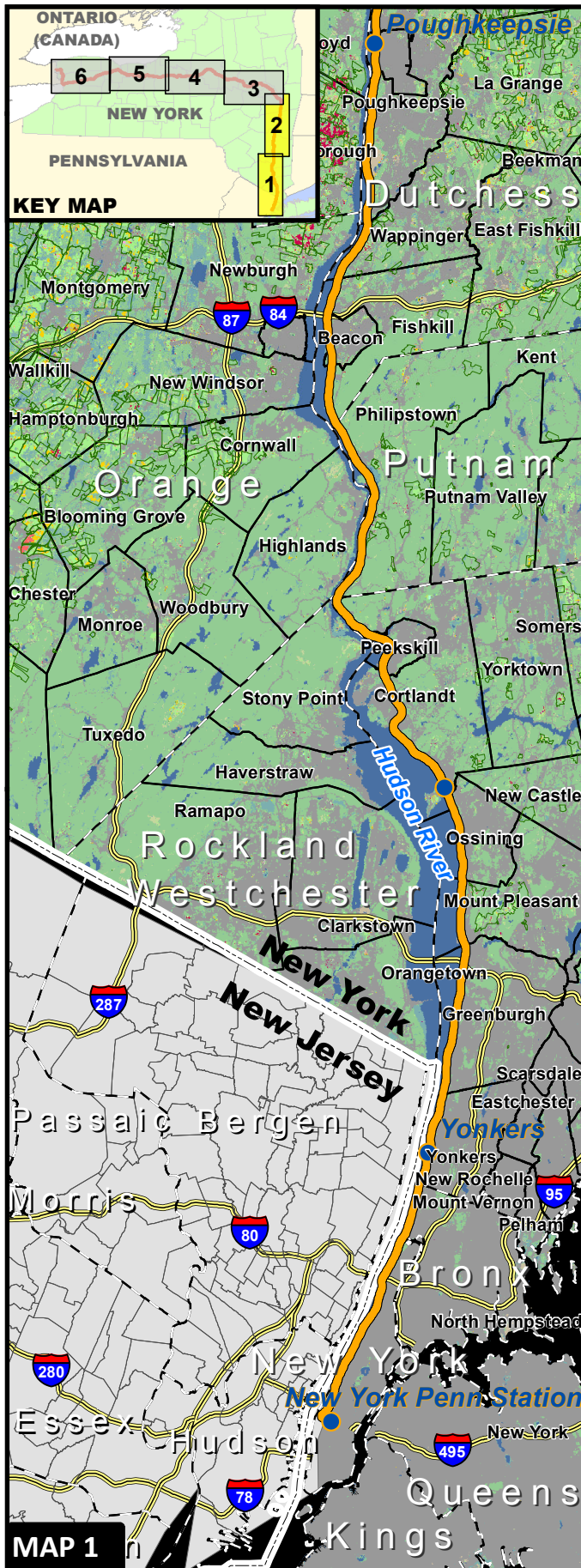


Farmland Map

Exhibit G-33

Tier 1 EIS
High Speed Rail
Empire Corridor Program





*Alt. 125 as shown is a potential corridor used to analyze the potential operating characteristics, environmental impacts and cost for this speed (125 mph) threshold.

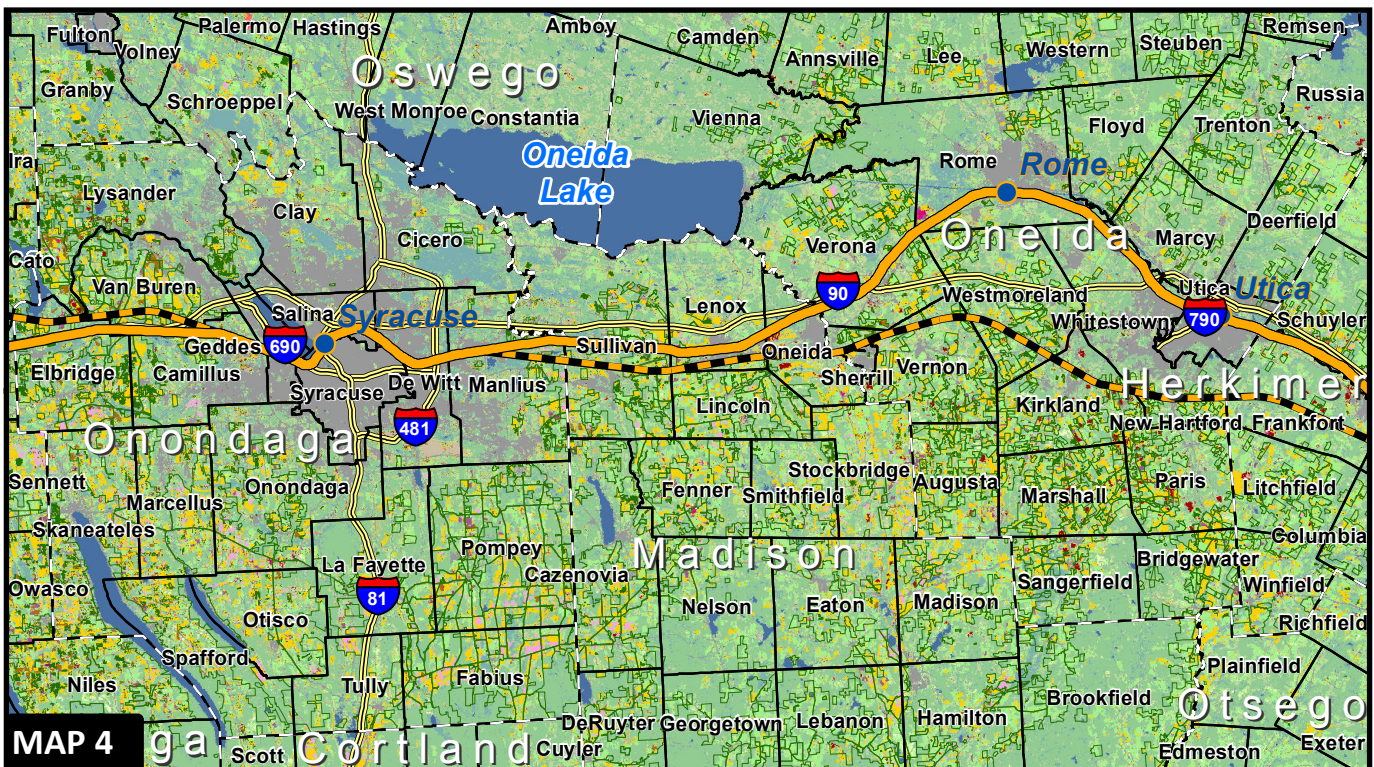
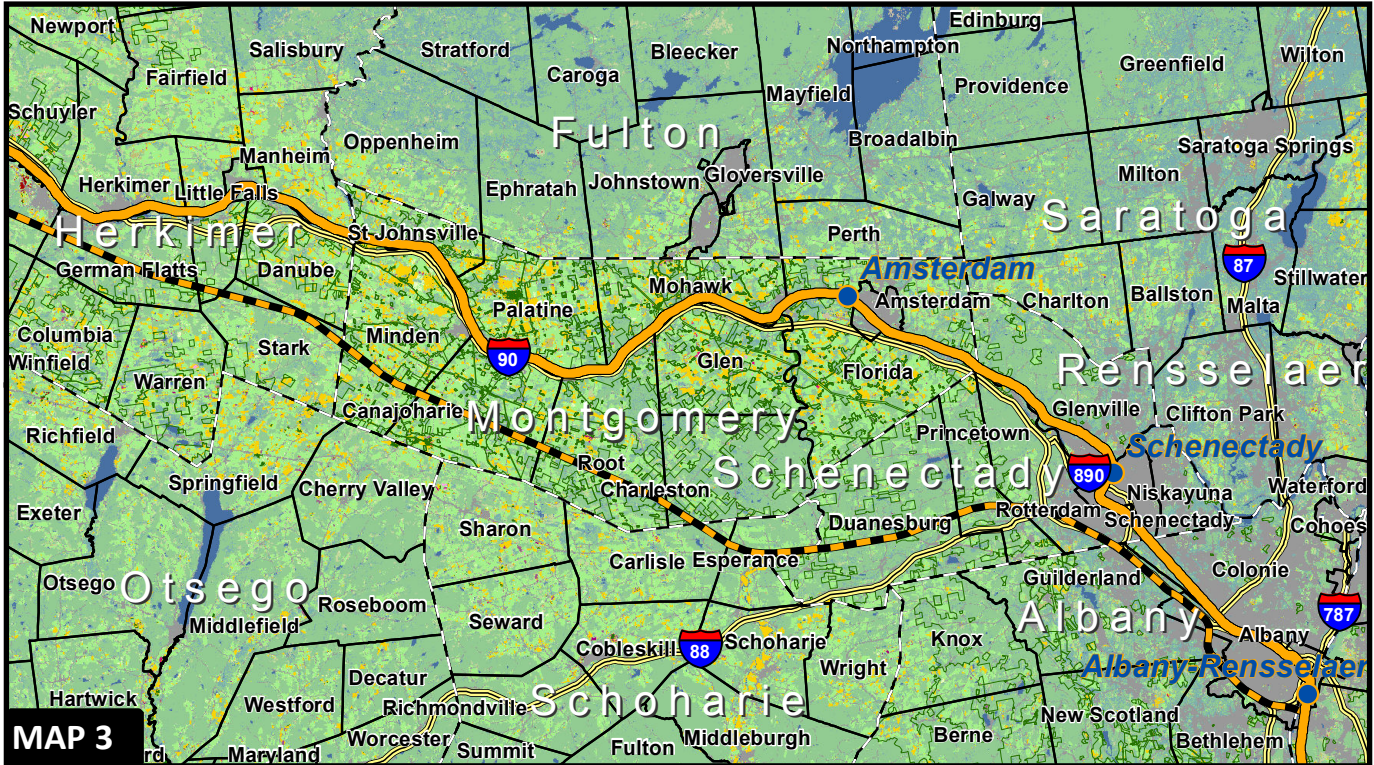
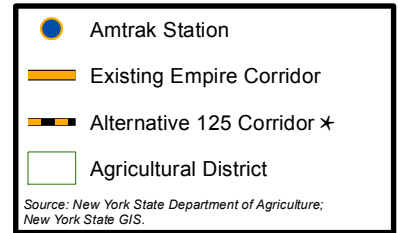
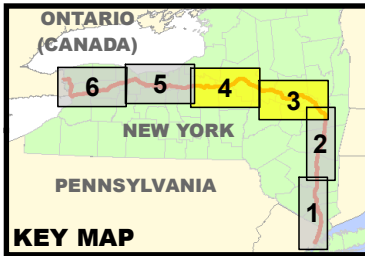


Cropland Map

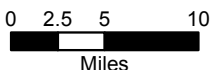
Exhibit G-34

Tier 1 EIS
High Speed Rail
Empire Corridor Program





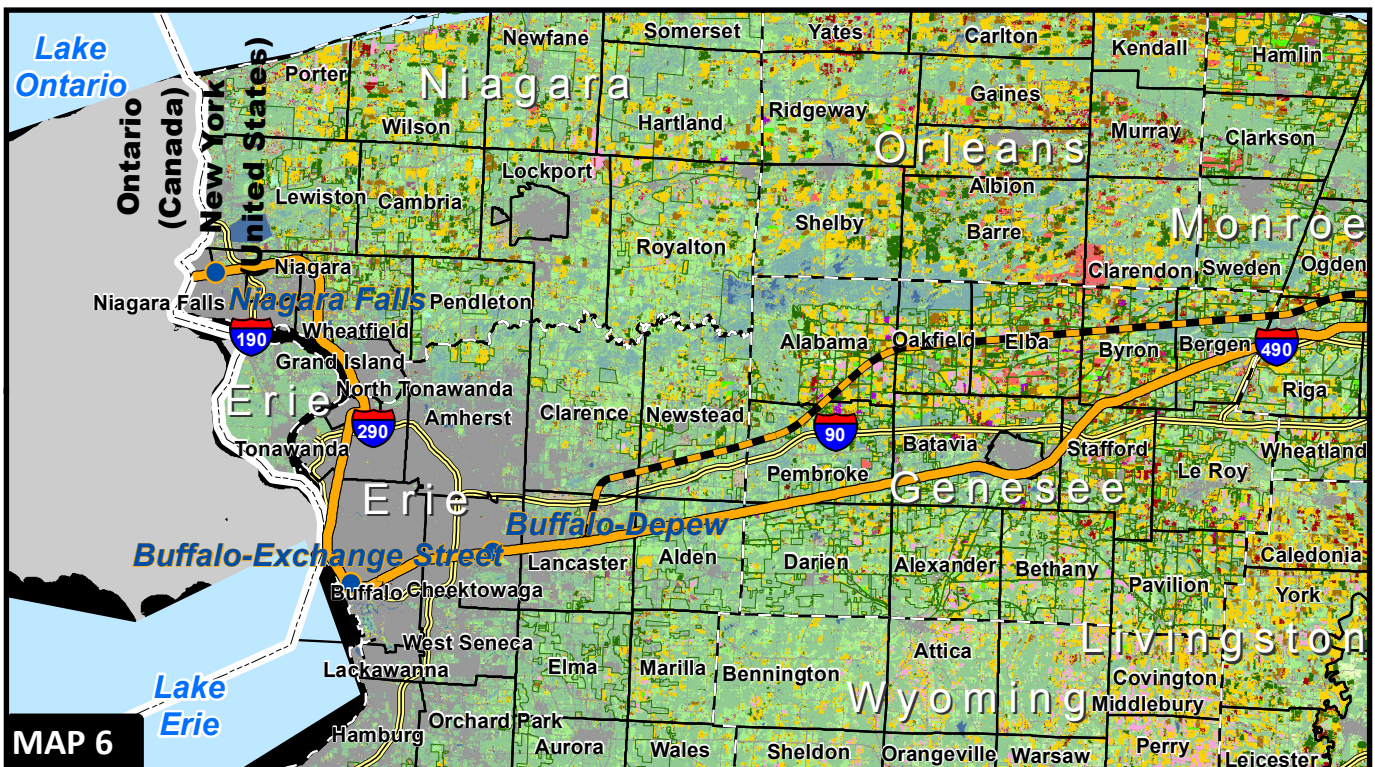
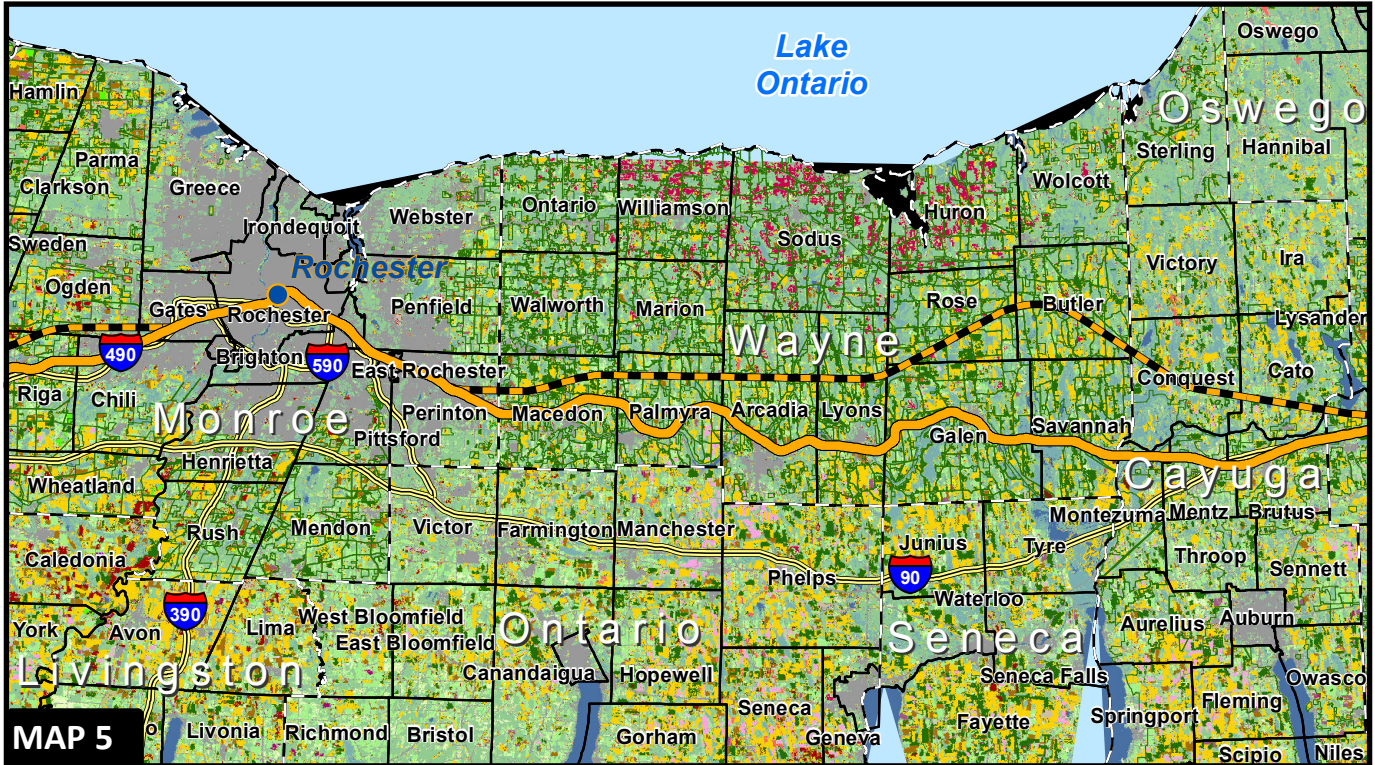
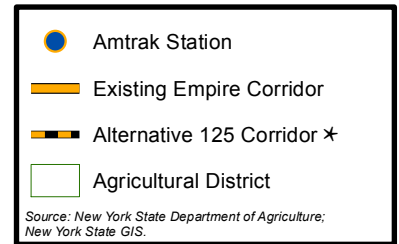
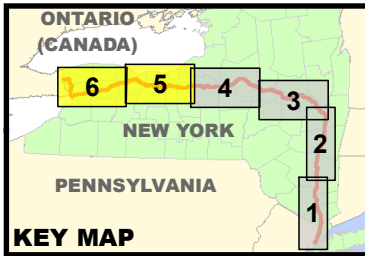
*Alt. 125 as shown is a potential corridor used to analyze the potential operating characteristics, environmental impacts and cost for this speed (125 mph) threshold.



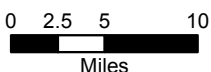
Cropland Map Exhibit G-34

Tier 1 EIS
High Speed Rail
Empire Corridor Program





✕ Alt. 125 as shown is a potential corridor used to analyze the potential operating characteristics, environmental impacts and cost for this speed (125 mph) threshold.



Cropland Map

Exhibit G-34

Tier 1 EIS
High Speed Rail
Empire Corridor Program



Agricultural Districts within the study area in Erie County. All of **Niagara County** along the remainder of the Niagara Branch consists of urbanized areas, although there are 3 acres of prime farmland, 52 acres of prime farmland if drained, and 9 acres of farmland of statewide importance in the 125 Study Area. There are also 84 acres within Agricultural Districts in Niagara County.

17.2 Environmental Consequences

Chapter 4 of the Tier 1 Final EIS addresses and compares the impacts of the Preferred Alternative, Alternative 90B, to those of the other alternatives considered (refer to Section 4.18). The potential effects of the Base Alternative and the other Build Alternatives are described in more detail below.

17.2.1 Base Alternative

The Base Alternative will maintain weekday service frequencies. The work for the Base Alternative were largely contained within the former track bed and the existing right-of-way. The Tier 1 Draft EIS addressed the potential farmland impacts of the eight projects included in the Base Alternative.

17.2.2 Alternative 90A

Empire Corridor South

Alternative 90A includes construction of 4 miles of second track through urbanized areas of Manhattan (MPs 9 to 13), and 1.4 miles of new track, extending under the Tappan Zee Bridge, for the Tarrytown Pocket Track/Interlocking. Both of these are located within designated urban areas and would not impact protected farmland.

With Alternative 90A, signal improvements proposed along 43 miles (MPs 32.8 and 75.8) extend through urban areas (Westchester and Dutchess Counties) or limited areas of prime farmland (Putnam County). There is only one location close to an Agricultural District, but work will be contained within the right-of-way and no protected farmland impacts are expected. Along this section, 10 miles of new third track (MPs 53 to 63) and improvements at the Poughkeepsie Yard/Storage Facility (MPs 71 to 75.8) would be located within urban areas in Dutchess County.

North of Poughkeepsie and south of Albany-Rensselaer Station (MPs 75.8 to 140), proposed improvements would include rock slope stabilization (MPs 105 to 130) and three new control points (CP 82, CP 99, and CP 136), as well as station improvements at Rhinecliff Station (high-level platforms) and Hudson Station (new Ferry Street Bridge and track realignments). These improvements would occur largely within the right-of-way and would not impact protected farmland. Alternative 90A includes replacement of the Livingston Avenue Bridge, which is in an urban area on both sides of the Albany County Line and would not impact protected farmland.

Empire Corridor West/Niagara Branch

With Alternative 90A, track improvements include approximately 10 miles of third track between MPs 169 and 178.5, and Amsterdam Station improvements along the west end of this segment. The western five miles of this segment extends through a designated urban area. The remaining five miles in eastern Montgomery County and extending into Schenectady County includes areas of prime farmland and extends close to Agricultural Districts in a few locations. However, this work could be contained within the existing right-of-way. Upgrades to interlockings and automatic block signals at three control points (CP 175, CP 239, and CP 248) will not affect prime farmlands or Agricultural Districts, as these are all located within urban areas.

Alternative 90A includes Syracuse Station track improvements (MPs 290 to 294) and third track improvements along 11 miles (MPs 373 to 382) west of the station. These work areas in Syracuse and Rochester are entirely within designated urban areas and do not adjoin Agricultural Districts. These Alternative 90A improvements would not impact protected farmland. Further to the west, the addition of a third track along 11 miles located largely west of the designated urban area around Rochester, and work outside of the right-of-way may affect prime farmlands and Agricultural Districts. However, the majority of the work would be located within the right-of-way.

Station improvements at the Buffalo-Depew Station would be located within an urban area, and no Agricultural Districts are located in this area. Although the proposed double track (MPs QDN17 to QDN23.2) along the Niagara Branch is located within an urban area, work outside the right-of-way in this area may affect Agricultural Districts.

17.2.3 Alternative 110**Empire Corridor South**

No additional work within Empire Corridor South, other than that proposed for Alternative 90A, is proposed, and farmland impacts are not anticipated to occur.

Empire Corridor West/Niagara Branch

With Alternative 110, track realignments outside of the right-of-way would be required near MP 165 in Schenectady County, but this would be located within an urban area and would not impact protected farmland. The connection of the third track to Selkirk Branch at MP 168 may affect mapped areas of prime farmlands and borders on an urban area, south of the railroad. There are no Agricultural Districts that would be affected.

Work extending outside of the right-of-way for construction of the third and fourth tracks and a maintenance service road at MP 182 in Montgomery County may affect prime farmlands and Agricultural Districts. West of the urban area around Fonda (west of MP 186.85) to MP 189.5, work outside of the right-of-way (maintenance service road and relocated freight track west to turnout at MP 187.8 and third track west of this point) may involve impacts to protected farmland and Agricultural Districts. However, most of the prime farmlands along this section are situated on the opposite (south) side of the tracks. Realignment of the third track at MP 192.5 and a maintenance service road (MPs 194 to 197) may affect prime farmland and Agricultural Districts. Relocation of Route 5, which closely borders this section of the Empire Corridor West, may indirectly affect farmland areas in this and other areas of Montgomery and Herkimer Counties. A maintenance service

road that may extend outside of the right-of-way in certain areas between MPs 197 and 201 and track realignments at MPs 198 and 199.3 are situated within a designated urban area. However, the track realignment at MP 199.3 may affect Agricultural Districts. Track realignment of the new/relocated freight tracks and the third track at MPs 205 and 206 may impact prime farmlands and Agricultural Districts in Montgomery County.

In Herkimer County, the third track and maintenance service road may also affect prime farmlands at MPs 208.3 to 208.5 and between MPs 210 to 213. There are no Agricultural Districts in these areas that would be affected. West of MP 215, the remainder of the tracks in Herkimer County is located within an urban area. In this section, there are areas where the maintenance service road and in some locations, the proposed third track, may extend outside of the right-of-way (MP 215.5, where fourth track will be added, impacts could occur at MPs 218.5 to 219, MP 222, MPs 226.4 to 228, and MPs 229 to 229.8). There are no Agricultural Districts along most of these areas, with the exception of the westernmost area. A maintenance service road in this last section (MPs 229 to 229.8) that may extend along the edge of and outside the right-of-way may affect an Agricultural District and actively farmed fields. A maintenance service road and the proposed third track between MPs 230.4 to 230.9 may involve property takings and relocation of Route 5, indirectly or directly affecting an Agricultural District. Between MPs 231 and 235.3, near the Oneida County line, the addition of a maintenance road and the third track may cross out of the right-of-way in a number of locations, potentially affecting Agricultural Districts.

In Oneida County, the addition of third and fourth tracks and relocated freight track may extend outside of the right-of-way in the section between the county line and Utica Station, but this is within an urban area, and no Agricultural Districts abut the railroad.

In Wayne County, the addition of a third track and maintenance service road may involve right-of-way impacts near MP 341, but this is in an urban area and will not affect Agricultural Districts.

In Genesee County, the new/relocated freight mains north of the existing railroad and a maintenance service road may potentially affect farmlands. Prime farmlands, active farmfields, and structures, and Agricultural Districts may potentially be affected in the area between MPs 389 and 395.

The proposed work in the vicinity of passenger stations at Rome, Syracuse, Rochester, and Buffalo-Depew and addition of tracks near these sites are situated within urban areas and will not affect farmlands.

17.2.4 Alternative 125

Alternative 125 would include a “sealed” corridor with minimal crossings and therefore there may be potential accessibility impacts to active farming operations. Alternative 90A would be situated within the right-of-way and also would involve work within urban areas in many locations, and therefore is not anticipated to impact farmland.

Empire Corridor South

No new improvements, beyond what is proposed for Alternative 90A, would be proposed for Alternative 125 along the majority of Empire Corridor South. However, roughly one mile of the proposed 125 mph track would extend south from Albany-Rensselaer Station to cross the Hudson River, but this is located entirely within designated urban area and would not impact farmland.

Empire Corridor West/Niagara Branch

Alternative 125 would include new right-of-way in most areas, but would merge back with the Empire Corridor over two 15- and 16-mile segments centered on Syracuse and Rochester, respectively. This route covers 126 miles on new alignment between Rensselaer County and a point 8.5 miles east of Syracuse Station. Alternative 125 extends through urban areas in Albany and Schenectady Counties over a distance of 20 miles, following the New York State Thruway (I-87/I-90) over most of this distance. As the area is urban, there are no prime farmlands in this section, although the corridor extends close to or through Agricultural Districts in two isolated locations.

West of the urban area, Alternative 125 extends through or close to eight Agricultural Districts in Schenectady County and one in Schoharie County. Alternative 125 in this area passes through farmlands of statewide significance, and prime farmlands are more limited and dispersed.

Alternative 125 extends through Montgomery County, where Agricultural Districts cover most of the county along the corridor. The distribution of farmlands of statewide importance is much more dispersed, and there are limited occurrences of prime farmlands along the corridor in the county.

In Herkimer County, Alternative 125 crosses three Agricultural Districts, as well as two urban areas surrounding Herkimer and Utica on the west. The distribution of farmlands of statewide importance is dispersed, with even fewer occurrences of prime farmland along the corridor.

In Oneida County, Alternative 125 crosses prime farmland in a number of locations in the county. Alternative 125 also extends through 16 agricultural districts.

In Madison County, Alternative 125 extends through prime farmlands and farmlands of statewide significance in this county. This alternative also crosses five larger Agricultural Districts, which encompass roughly 4 miles of the corridor.

In Onondaga County, the alignment merges with the existing Empire Corridor. West of the Syracuse urban area, Alternative 125 passes through areas of prime farmland, and also crosses or adjoins at least 13 Agricultural Districts in the county,

In Cayuga and Wayne Counties, Agricultural Districts extend along almost the entire length of Alternative 125. Two large Agricultural Districts, and one or two smaller districts, cover the entire length of the corridor of Cayuga County. At least 47 Agricultural Districts coincide with the corridor in Wayne County. The corridor also passes through areas of prime farmlands in both counties, although the western 2.5 miles in Wayne County extends through an urban area.

Alternative 125 extends almost entirely through urban areas in Monroe County (along 16 miles surrounding in the City of Rochester), where it merges with the existing Empire Corridor, diverging again 5.5 miles west of Rochester Station to continue on new alignment 52 miles west to Buffalo. West of the urban area, Alternative 125 passes through farmland on the remaining three miles on the west end of the county, passing through three Agricultural Districts and areas of prime farmland

Alternative 125 extends through or adjacent to at least 25 Agricultural Districts and areas of prime farmland in Genesee County. In Erie County, Alternative 125 extends through one large Agricultural District that covers much of the 6 miles before the corridor enters the urban area.

Alternative 125 continues 5.5 miles past the eastern edge of the urban area to merges back with the existing Empire Corridor/Niagara Branch. This urban area continues along the remainder of the corridor through Buffalo and Niagara Falls, so no farmland impacts are anticipated along this segment of the program.

18. Air Quality

For air quality, the current regulatory standards (NAAQS) and attainment areas are presented in Section 4.19.1 and 4.19.2, and impact assessments for the Preferred Alternative are presented in Section 4.19.4 of the Tier 1 Final EIS.

18.1 Existing Conditions

18.1.1 Monitoring Data

Existing conditions, presented as context for the analyses, are presented based on existing ambient air quality information collected by NYSDEC. The concentrations of all criteria pollutants measured at ambient air quality monitoring stations in areas near the Empire Corridor at the nearest stations available in the various regions, as presented in the Tier 1 Draft EIS, are presented in Exhibit G-31. HAP concentrations in ambient air are not routinely monitored, and existing data is largely relevant only to highly localized sources, and, therefore, is not presented here.

18.1.2 Methodology

Local (Microscale) Air Quality Assessment

On a local scale, the potential effect of the program on air quality is limited to increases in locomotive emissions, and both increases and decreases in on-road emissions. Decreases in on-road emissions could have a beneficial impact on local air quality if large numbers of vehicle trips are shifted to rail, occurring along roadways where those trips would otherwise occur. Since the details of that shift are not known at this time, this potential benefit has not been analyzed; however, the regional analysis includes a more meaningful analysis of the region-wide benefits of this mode shift. Since these trips may have the potential to adversely affect air quality, this effect will be analyzed in subsequent environmental analyses. Therefore, the remainder of this section focuses on the potential local effect associated with increases in locomotive emissions.

In order to assess the need for local air quality analysis, a screening analysis was first performed with the objective of identifying any potential for significant impacts on air quality resulting from rail operations, including all program alternatives (including the Base Alternative). A simplified pollutant dispersion model was created, using AERSCREEN²⁰—U.S. EPA's recommended screening-level air quality model based on the AMS/EPA Regulatory Model Improvement Committee Model (AERMOD). The model produces estimates of worst-case 1-hour concentrations for a single source, without the need for hourly meteorological data, and also includes conversion factors to estimate worst-case 3-hour, 8-hour, 24-hour, and annual concentrations. AERSCREEN is intended to produce concentration estimates that are equal to or greater than the estimates produced by AERMOD with a

²⁰ U.S. EPA, AERSCREEN User's Guide, EPA-454/B-11-001, March 2011, <http://www.epa.gov/ttn/scram/dispersion_screening.htm#aerscreen>.

fully developed set of meteorological and terrain data. The modeling followed the general procedures outlined in the Guideline on Air Quality Models (referred to as Appendix W).²¹ The model was run for both rural and urban conditions.

Exhibit G-31—Air Pollutant Concentrations along the Program Corridor (2019)

Ozone (ppm)		8-Hour		
NAAQS (2021)		0.070		
Albany-Schenectady-Troy, NY	Loudonville, Albany	0.056		
New York-N. New Jersey-Long Island, NY-NJ-CT—NY Portion	I.S. 52, Bronx	0.069		
Poughkeepsie, NY	Millbrook, Dutchess	0.063		
	Mt. Ninham, Putnam	0.062		
Rochester, NY	Rochester, Monroe	0.054		
Buffalo-Niagara Falls, NY	Amherst, Erie	0.066		
Syracuse, NY	East Syracuse, Onondaga	0.0582		
Utica-Rome, NY	Camden, Oneida	NA		
CO (ppm)		1-Hour		8-Hour
NAAQS (2021)		35		9
Albany-Schenectady-Troy, NY	Loudonville, Albany	1.25		0.87
New York, NY	Botanical Garden, Bronx	1.94		1.5
Rochester, NY	Rochester, Monroe	1.06		0.7
Buffalo-Niagara Falls, NY	Buffalo, Erie	1.1		0.7
Particulate Matter (µg/m³)		PM ₁₀ 24-Hour	PM _{2.5} 24-hour	PM _{2.5} Annual
NAAQS (2021)		150	35	12
Albany-Schenectady-Troy, NY	Albany, Albany	28 ¹	17.7	5.9
New York, NY	JHS 45, New York	NA	18.7	7.2
	I.S. 52, Bronx	33	19.4	7.4
Poughkeepsie, NY	Newburgh, Orange	NA	14.5	5.8
Rochester, NY	Rochester, Monroe	24	16.2	6.5
Buffalo-Niagara Falls, NY	Buffalo, Erie	29	16.8	7
Syracuse, NY	East Syracuse, Onondaga	NA	14.8	5.3
Utica-Rome, NY	Utica, Oneida	NA	12.8	4.9

(table continues)

²¹ U.S. EPA, 40 CFR Part 51, Revision to the Guideline on Air Quality Models: Adoption of a Preferred General Purpose (Flat and Complex Terrain) Dispersion Model and Other Revisions, November 9, 2005, <http://www.epa.gov/scram001/guidance/guide/appw_05.pdf>

Exhibit G-31 (cont'd)—Air Pollutant Concentrations along Proposed Program Alignment (2011)

SO ₂ (ppb)		1-Hour	Annual
NAAQS (2011)		75	500
Albany-Schenectady-Troy, NY	Loudonville, Albany	3.4	0.17
New York, NY	I.S. 52, Bronx	4.5	0.41
Poughkeepsie, NY	Mt. Ninham, Putnam	1.5	0.13
Rochester, NY	Rochester, Monroe	2.6	0.17
Buffalo-Niagara Falls, NY	Buffalo, Erie	19.1	18.2
Syracuse, NY	East Syracuse, Onondaga	0.9	0.12
NO ₂ (ppb)		1-Hour	Annual
NAAQS (2011)		100	53
Albany-Schenectady-Troy, NY	Botanical Gardens	57.5 ¹	14.9 ¹
New York, NY	I.S. 52, Bronx	7.7	16.87
Rochester, NY	Rochester, Near-Road	38.9	7.75
Buffalo-Niagara Falls, NY	Buffalo, Erie	51.0	9.11
Lead (µg/m ³)		3-month average	
NAAQS (2011)		0.15	
New York, NY	JHS 126, Brooklyn	0.0027	
Poughkeepsie, NY	Wallkill	0.01	
Rochester, NY	Rochester, Monroe	0.0017	
Notes:			
1. NYS DEC, New York State Ambient Air Quality Report (2013, 2017).			
NA Not Available			
Concentrations are presented in the statistical form defined in the NAAQS: Short-term average PM ₁₀ , CO, and SO ₂ 3-hour concentrations are the second-highest of the year. SO ₂ 1-hour is the 3-year average of the annual 99th percentile daily maximum 1-hour average concentration. NO ₂ 1-hour is the 3-year average of the annual 98th percentile daily maximum 1-hour average concentration. PM _{2.5} annual concentrations are the average of 2009-2011, and the 24-hour average concentration is the average of the annual 98th percentiles in 2009-2011. 8-hour average ozone concentrations are the average of the 4th highest-daily values from 2009-2011.			
Source: NYSDEC, New York State Ambient Air Quality Data for 2019.			

The dispersion analysis evaluated the total locomotive emissions associated with the full implementation of the program, in 2035, assuming the highest number of daily trips from any alternative—17 and 8 round-trips per day on the southern and western portions of the corridor, respectively. Since the increment is the same on both legs, and the total is almost double on the Empire Corridor South, the analysis focuses on the worst case—the Empire Corridor South. All locomotives associated with program would be newly manufactured model-year 2015 at the earliest, and would therefore be U.S. EPA Tier 4 certified (Tier 4 is the lowest emissions certification available to date, with considerably lower PM and NO_x emissions as compared to lower-tier locomotives). U.S. EPA's in-use Tier 4 locomotive emissions factors were used to calculate emissions.²² Annual NO_x concentrations were conservatively assessed assuming that 75 percent of all NO_x is converted to NO₂ (Appendix W Tier 2 method); this assumption may overestimate NO₂ concentrations by a factor of 6

²² U.S. EPA OTAQ, Emission Factors for Locomotives, EPA-420-F-09-025, April 2009.

or more, in addition to the high level of conservatism built in to the screening procedure, because the maximum concentrations predicted are immediately adjacent to the source, and would therefore not have time to be converted from NO to NO₂ (roughly 90 percent of NO_x emitted from diesel engines is in the form of NO).

Emissions estimates assumed the highest emissions, under two scenarios:

- **Line-Haul**—Emissions along the track, assumes locomotives operating at 100 percent load; and
- **Station**—Emissions immediately adjacent to the station, nearest to the locomotive stopping point. Assumes deceleration into and acceleration out of the station, in addition to idle emissions.

The results of the dispersion analysis are discussed in the context of background concentrations and the NAAQS.

Regional (Mesoscale) Analysis

Criteria Pollutants

The regional (mesoscale) emissions analysis estimates the net change in emissions associated with the program, including the change in both on-road and locomotive emissions. The analysis does not include the vehicle miles traveled (VMT) decrease associated with trips that may be reduced but that do not use the New York State Thruway system. Since these trips would likely not increase rail trips, the analysis is somewhat conservative (i.e., shows lower reductions and higher net emissions).

The local (microscale) analysis section above includes a description of the locomotive emission factors used. Analysts estimated power input using LTK Engineering Services' TrainOps simulation model. The model includes proposed grades, curves, station locations, speed restrictions and switch-related diverging movements specific to the proposed program alternatives. Analysts then calculated emissions for each non-attainment area by multiplying the total power input in horsepower-hour (hp-hr) within the area by the locomotive emission factor for each pollutant.

Analysts obtained on-road emission factors in grams per mile from the New York State Department of Transportation's Environmental Procedures Manual,²³ applying the factors for 2035, based on the representative speeds for each roadway class in each county from New York State Department of Environmental Protection's speed analysis prepared for the 2003 SIP motor vehicle emissions budget update.²⁴ Analysts estimated total vehicle miles-traveled (VMT) for each county and roadway class using the Cube Voyager model—an intercity travel demand model studying the mode share of travel (primary auto, bus, air, and rail) along the Empire Corridor. The mode share is driven primarily by a combination of the total travel time and the associated costs. The VMT were then multiplied by the corresponding emission factor and summed for each non-attainment area.

²³ NYSDOT, The Environmental Manual, <<https://www.dot.ny.gov/divisions/engineering/environmental-analysis/manuals-and-guidance/epm?nd=nysdot>>, accessed February 2012.

²⁴ NYSDEC, Motor Vehicle Emissions Budget Update, June 2003, Attachment 17, "Speed Tables".

Hazardous Air Pollutants

The Clean Air Act Amendments of 1990 listed 188 Hazardous Air Pollutants (HAPs) and addressed the need to control toxic emissions from transportation. EPA's 2007 Mobile Source Air Toxics (MSAT) rule identified a subset of seven HAPs as having significant contributions from mobile sources: benzene, 1,3-butadiene, formaldehyde, acrolein, naphthalene, polycyclic organic matter, and diesel particulate matter (DPM). The Federal Highway Administration (FHWA) also considers these the priority MSATs for analysis.²⁵ Analysts assessed MSATs using criteria in the Interim Guidance on Air Toxic Analysis in NEPA Documents, issued February 2006 by FHWA and the September 2009 update. Based on the FHWA guidance, the proposed alternatives do not require a detailed quantitative analysis. Nonetheless, in accordance with the program scope, analysts prepared an estimate of the net change in statewide MSAT emissions.

Since detailed MSAT emission factors for vehicles and locomotives were not available, analysts estimated emissions based on the ratio of the emissions of each pollutant to NO_x emissions from light duty gasoline vehicles and locomotives in New York State. Analysts obtained emissions data for New York State in 2008 for both sources from EPA's National Emissions Inventory.²⁶ The ratio of NO_x to each MSAT pollutant was calculated, and then multiplied by the projected statewide NO_x emission calculated using the above criteria pollutant methodology. Since these ratios are based on statewide locomotive emissions and on 2008 data, they do not reflect Tier 4 locomotives and future (2035) vehicle emissions, and therefore overestimate the emissions benefits (see discussion with results).

18.2 Environmental Consequences

Chapter 4 of the Tier 1 Final EIS addresses and compares the impacts of the Preferred Alternative, Alternative 90B, to those of the other alternatives considered, including the Base Alternative (refer to Sections 4.19). The potential effects of the other Build Alternatives are described in more detail below.

18.2.1 Local (Microscale) Air Quality Assessment

Screening Results

The results of the screening analysis, representing the effect of locomotive emissions along the track and at stations, is presented in Exhibit G-32. This assessment includes both urban and rural dispersion and background concentrations, and are presented separately for the western and the southern sections. As described above, this analysis includes many layers of conservative assumptions, resulting in high-end estimate of potential concentrations. The resulting concentrations are lower than the NAAQS for both annual-average NO₂ and PM_{2.5}—the two critical pollutants for this analysis, indicating that operations of the Preferred Alternative (Alternative 90B) would not result in a significant adverse impact with respect to these standards. Since particulate matter emitted from locomotives is almost entirely PM_{2.5} (and that was the assumption made for the analysis), and since the PM₁₀ standard is higher, with relatively lower background levels, locomotive operations would also not be expected to result in a significant adverse impact on PM₁₀ concentrations.

²⁵ FHWA, Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA Documents (HEPN-10), September 20, 2009.

²⁶ U.S. EPA, 2008 NEI, <<http://www.epa.gov/ttn/chief/net/2008inventory.html>>, accessed 3/7/2012.

Exhibit G-32—Screening Level Worst-Case Concentrations from Locomotive Operations ($\mu\text{g}/\text{m}^3$)

	NO ₂	PM _{2.5}	
	Annual	24-hour	Annual
<i>Albany—New York City, Rural Dispersion</i>			
Station	31.2	3.1	0.6
Line-Haul	36.6	0.7	0.7
Background	24.5	23.3	9.7
Total Station	55.8	26.4	10.3
Total Line-Haul	61.1	24.0	10.4
NAAQS	100	35	12
<i>Niagara—Buffalo, Rural Dispersion</i>			
Station	13.2	1.3	0.2
Line-Haul	7.6	0.3	0.7
Background	24.5	23.3	9.7
Total Station	37.7	24.6	9.9
Total Line-Haul	32.2	23.6	10.4
NAAQS	100	35	12
<i>Albany—New York City, Urban Dispersion</i>			
Station	2.0	0.2	0.04
Line-Haul	7.0	0.3	0.7
Background	39.4	28.6	10.9
Total Station	41.3	28.8	10.9
Total Line-Haul	46.3	28.9	11.6
NAAQS	100	35	12
<i>Niagara—Buffalo, Urban Dispersion</i>			
Station	0.8	0.08	0.02
Line-Haul	2.9	0.06	0.7
Background	39.4	28.6	10.9
Total Station	40.2	28.6	10.9
Total Line-Haul	42.3	28.6	11.6
NAAQS	100	35	12

1-Hour NO₂ National Ambient Air Quality Standard

The U.S. EPA established a new 1-hour average NO₂ standard of 100 parts per billion (ppb), effective April 12, 2010, in addition to the current annual standard. The statistical form is the 3-year average of the 98th percentile of daily maximum 1-hour average concentrations in a year. In 2018, the U.S. EPA reviewed and retained the Primary NAAQS mentioned above and Secondary NAAQS for NO₂ of 53 ppb, annualized mean.

By promulgating the 1-hour NO₂ standard, the U.S. EPA has initiated a process under the CAA that will ultimately result in the adoption of strategies designed to attain and maintain ambient NO₂ concentrations at levels below the standard. This process will first involve installation of additional ambient NO₂ monitoring stations near roadways. With respect to those areas that are identified as in non-attainment, states will be required to develop SIPs designed to meet the standard by specified time frames. In 2010, the U.S. EPA issued new regulations and guidance to address methodologies and criteria for performing assessments of 1-hour NO₂ concentrations from program-level emission sources and for evaluating their impacts.

Uncertainty exists as to 1-hour NO₂ background concentrations at ground level, especially near roadways, since these concentrations have not been measured within the current monitoring network. In addition, there are no clear methods to predict the rate of transformation of NO to NO₂ at ground-level given the level of existing data and models. The U.S. EPA, in promulgating the standard, has expressed specific concern regarding mobile source impacts, and estimated that ambient concentrations of NO₂ adjacent to roadways could be 30 to 100 percent higher than the concentrations measured at community scale (rooftop) monitoring stations.²⁷ Similar concerns may exist regarding areas adjacent to railways.

Therefore, predicted impacts cannot be based on comparison with the new 1-hour NO₂ NAAQS since total 98th percentile values, including local area roadway contributions, cannot be estimated. In addition, methods for accurately predicting 1-hour NO₂ concentrations from railways have not been developed. Given the scale of the NO_x emissions associated with the locomotives, exceedances of the 1-hour NO₂ standard resulting from locomotive operations cannot be ruled out; however, as discussed above, locomotives rated Tier 4 would be used, achieving the lowest practicable NO₂ emissions.

18.2.2 Regional (Mesoscale) Air Quality Assessment

Although the changes are small in the regional context, the net result is a reduction in all pollutants other than NO_x. The minor increase in NO_x emissions is lower than the *de minimis* levels defined in the conformity regulations and would, therefore, be presumed to conform to the applicable SIPs, and would not require a conformity determination. Reduction in emissions would conform to all SIPs and maintenance plans by definition, and would result in a small net air quality benefit on a regional scale. Overall, ozone is relatively insensitive to minor changes in VOC and NO_x, therefore the minor increase in NO_x and decrease in VOC offset each other in this project. VOC and NO_x are two main components of ozone, and their emissions in the atmosphere undergo reactions in the presence of sunlight to form ground-level ozone regulated under NAAQS for public health protection and general welfare. Because ozone creation is formed from both VOC and NO_x, the rate of ozone production can be VOC- or NO_x-limited depending on geographic characteristics and population concentrations. In rural areas, ozone is NO_x-limited in which increases in NO_x would increase ozone. Urban areas with higher population concentrations are VOC-limited, increases in NO_x would not increase ozone. However, the effect of VOC is somewhat smaller than NO_x in most regions, leading to a very minor overall change in air quality with respect to ozone.

To present these emission changes in context, the emissions were compared with the emissions

²⁷ U.S. EPA, Final Regulatory Impact Analysis for the NO₂ National Ambient Air Quality Standards (NAAQS), January 2010;

projected to occur in each analysis area in 2035 from the on-road sector.^{28, 29} The projected increase in NO_x emissions and decrease in VOC emissions represent less than 0.3 percent of emissions in each area (varies by region and alternative). Changes in all pollutants in the New York Metropolitan Area are projected to be approximately 0.02 percent or less, and changes in CO in the Syracuse area would be less than 0.2 percent. Under Alternative 125, the VOC benefits are somewhat higher, mostly in the Rochester and Buffalo-Niagara Falls analysis areas, and NO_x shows a benefit in those areas but shows a larger increase in the Poughkeepsie area. Changes in particulate matter would be negligible. Overall, in all cases these changes range from very small to negligible.

Alternatives

The total net change in criteria pollutant emissions from Alternative 90B (the Preferred Alternative), are presented in Exhibit G-33 and emissions from Alternatives 90A, 110, and 125 are presented in Exhibit G-34, Exhibit G-35, and Exhibit G-36, respectively. The Preferred Alternative will result in a net reduction of 61 tons per year of CO in the New York-New Jersey-Long Island non-attainment area (for 8-hour ozone) and 44 tons in the Syracuse area, with smaller reductions on VOCs (between 1.8 to 4 tons in the five cities analyzed).

Exhibit G-33—Criteria Pollutant Emissions Net Reduction, 2035, Alternative 90B, Preferred Alternative (tons per year)

Analysis Area	NO _x	VOC	CO	PM ₁₀	PM _{2.5}
Albany-Schenectady-Troy, NY	-8.0	4.0	NA	NA	NA
Rochester, NY	-3.1	5.0	NA	NA	NA
Buffalo-Niagara Falls, NY	-1.2	1.8	NA	NA	NA
Poughkeepsie, NY	-2.6	1.8	NA	NA	NA
New York-N. New Jersey-Long Island, NY-NJ-CT (ozone 8-hour non-attainment area)	-1.5	2.3	61	NA	0.24
Syracuse, NY	NA	NA	44	NA	NA
New York Co, NY (PM ₁₀ non-attainment area)	NA	NA	NA	0.00	NA
Notes: NA=Not Applicable. Data presented address only pollutants relevant to each former or current non-attainment area. Negative numbers represent a net increase.					

²⁸ NYMTC/OCTC, Final Transportation/Air Quality Conformity Determination for the Orange County Portion of the NY-NJ-CT PM_{2.5} Non-Attainment Area, May 12, 2010; PDCTC, Air Quality Conformity Determination Statement for the Poughkeepsie Ozone Non-attainment Area, May 12, 2010.

²⁹ For the Syracuse, Albany, Rochester, and Buffalo areas, future inventories or budgets were not available. The estimate is based on the ratio of 2008 NO_x emissions in each region (or CO for Syracuse) to the emissions in the NYMA, from the EPA National Emissions Inventory.

Exhibit G-34—Criteria Pollutant Emissions Net Reduction, 2035, Alternative 90A (tons per year)

Analysis Area	NO _x	VOC	CO	PM ₁₀	PM _{2.5}
Albany-Schenectady-Troy, NY	-6.2	3.6	NA	NA	NA
Rochester, NY	-4.7	4.3	NA	NA	NA
Buffalo-Niagara Falls, NY	-1.5	1.6	NA	NA	NA
Poughkeepsie, NY	-1.1	1.8	NA	NA	NA
New York-N. New Jersey-Long Island, NY-NJ-CT (ozone 8-hour non-attainment area)	-0.7	2.3	62	NA	0.25
Syracuse, NY	NA	NA	35	NA	NA
New York Co, NY (PM ₁₀ non-attainment area)	NA	NA	NA	0.00	NA
Notes: NA=Not Applicable. Data presented address only pollutants relevant to each former or current non-attainment area. Negative numbers represent a net increase.					

Exhibit G-35—Criteria Pollutant Emissions Net Reduction, 2035, Alternative 110 (tons per year)

Non-Attainment Area	NO _x	VOC	CO	PM ₁₀	PM _{2.5}
Albany-Schenectady-Troy, NY	-9.0	4.3	NA	NA	NA
Rochester, NY	-4.1	5.3	NA	NA	NA
Buffalo-Niagara Falls, NY	-1.4	1.9	NA	NA	NA
Poughkeepsie, NY	-2.6	1.8	NA	NA	NA
New York-N. New Jersey-Long Island, NY-NJ-CT (ozone 8-hour non-attainment area)	-1.5	2.3	61	NA	0.24
Syracuse, NY	NA	NA	48	NA	NA
New York Co, NY (PM ₁₀ non-attainment area)	NA	NA	NA	0.00	NA
Notes: NA=Not Applicable. Data presented address only pollutants relevant to each former or current non-attainment area. Negative numbers represent a net increase.					

Exhibit G-36—Criteria Pollutant Emissions Net Reduction, 2035, Alternative 125 (tons per year)

Non-Attainment Area	NO _x	VOC	CO	PM ₁₀	PM _{2.5}
Albany-Schenectady-Troy, NY (ozone)	-9.3	7.3	NA	NA	NA
Rochester, NY (ozone)	6.7	8.7	NA	NA	NA
Buffalo-Niagara Falls, NY (ozone)	2.0	2.8	NA	NA	NA
Poughkeepsie, NY (ozone)	-9.6	1.7	NA	NA	NA
New York-N. New Jersey-Long Island, NY-NJ-CT (ozone, CO, PM _{2.5})	-7.1	2.1	55	NA	0.16
Syracuse, NY (CO)	NA	NA	100	NA	NA
New York Co, NY (PM ₁₀)	NA	NA	NA	-0.02	NA
Notes: NA=Not Applicable. Data presented address only pollutants relevant to each former or current non-attainment area. Negative numbers represent a net increase.					

Exhibit G-37 identifies the net statewide reduction in MSAT emissions. Since the estimate is based on 2008 data and represents a mix for all locomotive types, this analysis does not capture the benefits

of the Tier 4 locomotives, but also does not capture the benefits of future cleaner light duty gasoline vehicles. U.S. EPA regulations for vehicle engines and fuels will cause overall MSAT emissions to decline significantly over the next several decades in three ways: (1) by lowering the benzene content in gasoline; (2) by reducing exhaust emissions from passenger vehicles operated at cold temperatures; and (3) by reducing emissions that evaporate from, and permeate through, portable fuel containers. In June 2008, the U.S. EPA finalized regulations to reduce emissions from diesel-powered rail. The new regulations would reduce PM emissions by as much as 90 percent and NO_x up to 80 percent. Other federal regulations for both on-road and non-road vehicles are severely reducing diesel emissions, with the expectation for diesel PM and NO_x to diminish over time.

Note that these reductions do not necessarily translate into health or environmental benefits, which would depend on local concentrations at specific locations, rather than statewide emissions. Along roadways, if there would be any noticeable change it would be a reduction, on the order of the local VMT reduction; along rail lines, if there were to be any noticeable change it would not occur along the electrified portion of Alternative 125. A more detailed analysis of local effects may be undertaken during subsequent environmental analysis.

Exhibit G-37—State-Wide Hazardous Air Pollutant Emissions (net reduction tons per year)

Pollutant	Alternative			
	90A	90B	110	125*
1,3-Butadiene	0.069	0.079	0.084	0.133
Acrolein	0.005	0.006	0.006	0.010
Formaldehyde	0.125	0.150	0.151	0.243
Benzene	0.602	0.681	0.728	1.152
Naphthalene	0.009	0.011	0.011	0.018
Polycyclic organic matter / hydrocarbons	0.0004	0.0007	0.0005	0.0008
Notes: * Net emissions do not include increased electricity consumption. No data is available to describe where electricity would come from and what the HAP emissions would be from each source.				

19. Energy, and Climate Change

The greenhouse gas assessment for the Preferred Alternative is presented in Section 4.20.4 of the Tier 1 Final EIS. The Tier 1 Draft EIS energy and climate change inventory and impact assessments for the other Build Alternatives are presented in the following sections.

19.1 Existing Conditions

19.1.1 Regulatory Context

Greenhouse Gas Policy, Regulations, Standards, and Benchmarks

The energy and GHG analysis was prepared in accordance with the *Draft Air Quality, Energy and Greenhouse Gas Emission Analysis Procedures for Plans and TIPs and Draft Energy and Greenhouse Gas Emission Analysis Procedures for Projects*, February 12, 2003, and subsequent guidance and methods

provided by NYSDOT. In addition to the NYSDOT methodology, the general approach follows the New York State Department of Environmental Conservation (NYSDEC) policy document entitled *Assessing Energy Use and Greenhouse Gas Emissions in Environmental Impact Statements*, July 15, 2009 (NYSDEC policy). The Council on Environmental Quality's (CEQ) final guidance entitled *Final NEPA Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews*, August 1, 2016, was consulted as well.

The global climate is changing as a result of increased concentrations of GHGs in the atmosphere, associated with anthropogenic (from human sources) emissions. GHGs emitted from anthropogenic sources include primarily emissions from combustion of fossil fuels, as well as various other processes. Atmospheric concentrations of GHGs are increasing because the chemical removal processes are limited, and the rate of emission exceeds the rate of the natural removal processes. The increase in GHG concentrations, since the beginning of the industrial age, has led to a measurable warming of the Earth's atmosphere, surface, and oceans, which, in turn, has and will result in myriad of complex climatic changes that will vary by geographic location, substantially affecting human and natural systems.

While the contribution of any single program to climate change is infinitesimal, the combined GHG emissions from all human activity have a severe adverse impact on global climate. The nature of the impact dictates that all sectors address GHG emissions by identifying GHG sources and practicable means to reduce them.

Understanding that human activity resulting in GHG emissions has potential to impact the earth's climate negatively, countries around the world have undertaken efforts to reduce emissions by implementing measures addressing energy consumption and production, land use, and other sectors. Although the U.S. has not ratified the international agreements, which set emissions targets for GHGs, in a step toward the development of national climate change regulation, the U.S. has agreed that deep cuts are necessary and has agreed to take action to meet this objective, with a stated goal of reducing emissions to 17 percent lower than 2005 levels by 2020 and to 83 percent lower than 2005 levels by 2050 (pending legislation) via the Copenhagen Accord.³⁰ Without legislation focused on this goal, the U.S. EPA is required to regulate GHG under the U.S. Clean Air Act, and has already begun preparing regulations. The U.S. EPA has established various voluntary programs to reduce emissions and increase energy efficiency and has recently embarked on regulatory initiatives related to GHG emissions. In 2011, total U.S. greenhouse gas emissions were 6,702.3 teragrams (Tg), or million metric tons, of CO₂e. Total U.S. emissions have increased by 8.4 percent from 1990 to 2011, and emissions decreased from 2010 to 2011 by 1.6 percent (108.0 Tg CO₂e).³¹

In March 2009, the U.S.DOT set combined corporate average fuel economy (CAFE) standards for light duty vehicles for the 2011 model year. In June 2009, the U.S. EPA granted California a previously-denied waiver to regulate vehicular GHG emissions, allowing 19 other states (representing 40 percent of the light-duty vehicle market, including New York) to adopt the California mobile source GHG emissions standards. In April 2010, the U.S. EPA and the U.S. DOT established the first GHG emission standards and more stringent CAFE standards for model year 2012 through 2016 light-duty vehicles. The agencies also proposed the first-ever program to reduce GHG emissions and improve fuel efficiency of medium- and

³⁰ UNFCCC Conference of the Parties, Copenhagen Accord, March 30, 2010; Todd Stern, U.S. Special Envoy for Climate Change, letter to Mr. Yvo de Boer, UNFCCC, January 28, 2010.

³¹ The decrease from 2010 to 2011 was due to a decrease in the carbon intensity of fuels consumed to generate electricity due to a decrease in coal consumption, with increased natural gas consumption and a significant increase in hydropower used. Additionally, relatively mild winter conditions, especially in the South Atlantic Region of the United States where electricity is an important heating fuel, resulted in an overall decrease in electricity demand in most sectors. Since 1990, U.S. emissions have increased at an average annual rate of 0.4 percent.

heavy-duty vehicles, such as large pickup trucks and vans, semi-trucks, and vocational vehicles. These regulations will all serve to reduce vehicular GHG emissions over time.

There are also regional, state, and local efforts to reduce GHG emissions. In 2009, Governor Paterson issued Executive Order No. 24, establishing a goal of reducing GHG emissions in New York by 80 percent, compared to 1990 levels, by 2050, and creating a Climate Action Council tasked with preparing a climate action plan outlining the policies required to attain the GHG reduction goal—that effort is currently under way, and an interim draft plan has been published.³²

The 2009 New York State Energy Plan³³ outlines the state's energy goals and provides strategies and recommendations for meeting those goals. The state's goals include, among other measures, reducing vehicle miles traveled by expanding alternative transportation options.

In July 2019, New York State passed the Climate Leadership and Community Protection Act (Climate Act)³⁴ to adopt measures towards two main goals, to achieve 100 percent zero-emission electricity by 2040 and reduce emissions to at least 85 percent below 1990 levels by 2050. The scoping plan will create enforceable emissions limits to reduce greenhouse gas emissions from oil, gas and diesel combustion based on performance-based standards for emissions and electrification in the transportation sector. Further, scoping will also include land-use and transportation planning aimed at reducing greenhouse gas emissions from motor vehicles.

In January 2021, the new Presidential Administration signed a series of executive orders to promote climate action. One Executive Order proposes the U.S. EPA create a Federal Implementation Plan to control ozone for several states including New York.³⁵ The newly established Working Group will determine and publish interim and final social cost determinations for carbon, nitrous oxide and methane. The social costs will be used to calculate value changes for greenhouse gas emission regulations.

Another Executive Order contained several climate-related goals to build resilience to mitigate the impacts of climate change for current future intensities. The U.S. will pursue efforts that align with the main objectives of the Paris Agreement, clean energy, decarbonization and financial alignment. This executive order established the National Climate Task Force for policy planning and implementation to increase climate change and reduce climate pollution. The Executive Order removes fossil fuel subsidies from the Federal budget, ensures Federal infrastructure investment reduces climate pollution and that Federal permitting considers greenhouse gas emissions and climate change.

Greenhouse Gas Emissions

Potential Impacts of Climate Change

The analysis of impacts of climate change on the proposed program focuses on potential changes in sea level and storm surge particularly as they relate to the Hudson River. Existing scientific studies

³² New York State Climate Action Council. *New York State Climate Action Plan Development Process*. December 7, 2009. <<http://www.nyclimatechange.us/>>.

³³ New York State, *2009 New York State Energy Plan*, December 2009.

³⁴ New York State Senate. 2019. *Senate Bill S6599*. <https://www.nysenate.gov/legislation/bills/2019/s6599>.

³⁵ WhiteHouse.Gov. Presidential Actions. 2021, January 20. *Executive Order on Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis*. <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/20/executive-order-protecting-public-health-and-environment-and-restoring-science-to-tackle-climate-crisis/>

and information available from New York State sources were reviewed, and relevant information is presented. Due to the uncertain nature of predictions for future climate change impacts on the Hudson River, a range of possible effects is presented. Although changes in precipitation may occur in future years, affecting flood levels in other areas, the level of detail and certainty regarding those types of effects is currently insufficient for planning purposes.

Extent of Analysis

Since the impact of GHGs emitted in the troposphere is generally the same regardless of where they are emitted, the analysis of GHGs addresses emissions resulting from the proposed program, regardless of their location. Direct emissions include emissions from sources located on-site, such as construction equipment during the construction period and locomotive emissions during long-term operation of the program. Indirect emissions include emissions from, vehicle trips associated with the program (both increased and reduced) and emissions associated with electricity consumption. In addition, there are emissions preceding and following the proposed program, referred to as upstream and downstream emissions, such as emissions associated with the transport and production of fuels and construction materials, and emissions associated with disposal of materials after their use. The GHG analysis addresses both direct and indirect emissions, and, where practicable and significant, upstream and downstream emissions as well, including fuel and materials production.

Pollutants of Concern

GHGs are those gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and emit infrared radiation (heat) emitted by the Earth's surface, the atmosphere, and clouds. This property causes the general warming of the Earth's atmosphere, or the "greenhouse effect." Water vapor, carbon dioxide (CO₂), nitrous oxide, methane, and ozone are the primary greenhouse gases in the Earth's atmosphere.

There are also a number of entirely human-made GHGs—mainly halocarbons and other chlorine- and bromine-containing substances—which also damage the stratospheric ozone layer (contributing to the "ozone hole"). Since these compounds are being replaced and phased out due to the 1987 Montreal Protocol and are not associated with most projects, there is generally no need to address them in program-related GHG assessments. Although ozone is considered to be the third most important greenhouse gas, after CO₂ and methane, it does not need to be assessed as such at the program level since it is a rapidly-reacting chemical and efforts are ongoing to reduce ozone concentrations as a criteria pollutant (see Section 4.19, "Air Quality"). Similarly, water vapor is of great importance to global climate change, but is not directly of concern as an emitted GHG since the negligible quantities emitted from anthropogenic sources are not of concern.

Carbon dioxide (CO₂) is the primary pollutant of concern from anthropogenic sources. Although not the GHG with the strongest effect per molecule, CO₂ is by far the most abundant and, therefore, the most influential GHG. CO₂ is emitted from any combustion process (both natural and anthropogenic), from some industrial processes such as the manufacture of cement, mineral production, metal production, and the use of petroleum-based products, from volcanic eruptions, and from the decay of organic matter. CO₂ is removed ("sequestered") from the lower atmosphere by natural processes such as photosynthesis and uptake by the oceans.

Methane and nitrous oxide (N₂O) also play an important role since they have limited removal processes and a relatively high impact on global climate change as compared to an equal quantity of

CO₂. Emissions of these compounds, therefore, are included in GHG emissions analyses as appropriate.

The NYSDEC and CEQ guidance list six GHGs that could potentially be included in the scope of an EIS: CO₂, N₂O, methane, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). This analysis focuses mostly on CO₂, N₂O, and methane resulting from combustion sources such as locomotives and vehicles, as well as sources associated with production of construction materials. There are no significant direct or indirect sources of HFCs, PFCs, or SF₆ associated with the proposed program.

To present a complete inventory of all GHGs, component emissions are added together and presented as CO₂ equivalent (CO₂e)—a unit representing the quantity of each GHG weighted by its effectiveness using CO₂ as a reference. This is achieved by multiplying the quantity of each GHG emitted by a factor called global warming potential (GWP). GWPs account for the lifetime and the radiative forcing of each chemical over a period of 100 years (e.g., CO₂ has a much shorter atmospheric lifetime than SF₆, and therefore has a much lower GWP). The GWPs for the main GHGs discussed here are presented in Exhibit G-38.

Exhibit G-38—Global Warming Potential (GWP) for Major GHGs

Greenhouse Gas	100-year Horizon GWP
Carbon Dioxide (CO ₂)	1
Methane (CH ₄)	25
Nitrous Oxide (N ₂ O)	298
Hydrofluorocarbons (HFCs)	124 to 14,800
Perfluorocarbons (PFCs)	7,390 to 12,200
Sulfur Hexafluoride (SF ₆)	22,800

Source: IPCC, Climate Change 2007—The Physical Science Basis, Contribution of Working Group I to the Fourth Assessment Report, Table 2-14, 2007.

19.1.2 Methodology

This section describes the parameters used for the GHG assessment and describes the methodology used to calculate the GHG emissions from each included source.

Time Scales for Analysis

Operational emissions are presented for a single year, 2035, which would be representative of a reasonable worst-case scenario. Operational emissions may be lower in more distant years if the carbon content of fuels improve (or is replaced by electric power) and later if locomotives are replaced with more efficient models or rebuilt; the reduction in vehicular emissions may also be reduced in far-future years as vehicular emissions and fuels also improve. Emissions related to construction activity and embodied materials would occur over a period prior to and during

construction, and are presented both as total emissions and annualized over an estimated 80-year lifetime of the proposed program.

Emission Calculations

Section 4.20 of the Tier 1 Final EIS provide a summary of the GHG assessment and the operational emissions included in the impact assessment (locomotive and on-road fuel consumption, energy use (rail only), fuel use for construction material delivery, and building materials production). These calculations are described further below.

A minimal change in the amount of solid waste would be generated as a result of the proposed program. Therefore, emissions from solid waste decomposition were not included.

Generally, the elimination of vegetation on a site would accelerate the release of CO₂ sequestered in any vegetation found on the site back to the atmosphere. This would mostly be relevant only for the 125 mph alternative, where a new alignment is expected. For other alternatives, it is unknown at this time if any tree removal would be required. However, detailed information on this is not available at this time, and therefore sequestration has not been included in this analysis.

Locomotive and On-Road Fuel Consumption

Emissions associated with the locomotive operations and on-road vehicle trips were calculated using the methods in NYSDOT's MOVES Roadway and Rail Energy and Greenhouse Gas Analysis Extension (MOVES-RREGGAE). This program enables analysis of rail operations and on-road trips, using EPA's MOVES-HVI model for on-road emissions and the analysis procedures in NYSDOT's *Draft Energy Analysis Guidelines for Project-Level Analysis*, November 25, 2003 (NYSDOT guidance).

The locomotive emissions were refined outside of the model to account for the fact that operation on the line is not represented by the national averages used in MOVES-RREGGAE for Amtrak service, and since more detailed data was available. Fuel consumption was estimated using LTK Engineering Services' TrainOps simulation model. The model includes proposed grades, curves, station locations, speed restrictions and switch-related diverging movements specific to the proposed program alternatives. Locomotive emissions were calculated by multiplying the fuel consumption by emission and energy factors for diesel fuel, assuming 10.15 kilograms of CO₂ per gallon of diesel and 138,756 British thermal units (Btu) per gallon of diesel.³⁶ These were adjusted to account for well-to-pump emissions by the same ratio used for all diesel, consistent with the method used throughout the analysis.

Electricity Use

Analysts estimated electricity consumption for the electrified portion of the line (Albany to Buffalo) under the 125 Alternative using the TrainOps simulation model. The electricity consumption was estimated to be 258,198 kilowatt-hours per day, and would be constant throughout the year. This includes system losses within the Amtrak system, but does not include any incremental electricity use for facilities or stations, which is unknown at this time.

³⁶ EIA, Fuel Emission Coefficients, Table 2: Carbon Dioxide Emission Factors for Transportation Fuels, <<http://205.254.135.7/oiaf/1605/coefficients.html#tbl2>>, updated January 31, 2011.

GHG emissions associated with the electricity were estimated based on the above consumption rate and a factor of 686.7 pounds CO₂e per megawatt-hour of electricity delivered.³⁷ This represents the latest intensity of electricity production for upstate New York. The emissions intensity of future electricity production is expected to be lower due to various current and future policies aimed at increasing the production of electricity from renewable resources and improved energy efficiency in the utility sector. Therefore, this estimate represents a conservatively high estimate of emissions associated with the operation of electric locomotives.

Construction and Materials

Analysts used the procedures in MOVES-RREGGAE for rail construction to calculate estimated GHG emissions associated with direct construction emissions. In addition, analysts used the “Roadway Construction,” module for roadway construction segments associated with the construction, and for elements such as bridge construction not included in the “Railway Construction” module. Analysts calculated emissions associated with materials as part of the analysis (the methodology for estimating “placement energy” is based on energy estimated for materials, as detailed in the NYSDOT guidance—both were included here).

Summary of Emissions Analysis

Operational emissions are presented for a single year, 2035, which would be representative of a reasonable worst-case scenario. Emissions related to construction activity and embodied materials would occur over a period prior to and during construction, and are presented both as total emissions and annualized over an estimated 80-year lifetime of the proposed program.

The GHG emissions analysis includes the following sources:

- Locomotives fuel consumption,
- On-road fuel consumption,
- Electricity use (rail only),
- Fuel use for construction material delivery, and
- Building materials production.

Some additional emissions associated with stations and other operations would occur, but are not included at this time since detailed data is not yet available.

Annual emissions that would occur as a result of program operation were conservatively calculated based on the 2035 ridership scenario, representing the maximum emissions associated with the proposed program at full operation. This section describes the methodology used to calculate the GHG emissions from each included source.

19.2 Environmental Consequences

19.2.1 Greenhouse Gas Emissions for Program Alternatives

The long-term impact of the Build Alternatives on energy and greenhouse gas emissions is ultimately always positive, as the on-road benefits persist year after year and eventually offset the initial construction impacts (see Exhibit G-39, Exhibit G-40, and Exhibit G-41). As discussed in Section 4.20

³⁷ U.S. EPA, eGRID1010 Version 1.1, Year 2007 Summary Tables, <<http://www.epa.gov/cleanenergy/energy-resources/egrid>>.

of the Tier 1 Final EIS, the Preferred Alternative would result in an annual reduction of energy use (of approximately 391,000 million BTu) and greenhouse gas emissions (approximately 33,000 metric tons of CO₂ equivalent [CO₂e]) over the Base Alternative. This reduction in energy use and GHG emissions would be 20 percent greater than Alternative 90A and roughly equivalent to that for Alternative 110 (2% less). Compared to the Preferred Alternative, Alternative 125 has the greatest potential for decrease in annual energy use (44%) and GHG emissions (by 30%).

For the non-electric alternatives, rail energy and emissions slightly increase from Alternative 90A to Alternative 90B (the Preferred Alternative) to Alternative 110. Alternative 125 would have substantially more rail energy and emissions associated with added train trips, including both diesel and indirect electricity emissions. The benefits from removing vehicle trips from the road trend in the opposite direction with ridership and the ensuing energy and emissions benefits increase from Alternative 90A to Alternative 90B (the Preferred Alternative) to Alternative 110, and are substantially higher for Alternative 125.

However, Alternative 125 is likely to require the greatest quantity of energy and materials for construction. Thus, it has the greatest potential to adversely affect net energy and greenhouse gases (accounting for the difference between energy and GHG emissions from construction and from permanently reduced annual on-road energy use and emissions as auto and bus riders switch to more energy-efficient and less polluting rail). Other alternatives have lesser adverse initial energy and emissions impacts in proportion to their lesser construction emissions impacts. Alternative 90A would demonstrate a potential beneficial impact starting approximately 20 to 23 years after construction as the permanent emissions reduction due to auto/bus diversions to rail continues and eventually exceeds (in total over many years) the emissions increases recorded during construction.

As discussed in Section 4.20 of the Tier 1 Final EIS, Alternative 90B would have a potential beneficial impact starting approximately 47 to 50 years after construction, with Alternatives 110 and 125 demonstrating net positive energy and emissions impacts still further into the future, 78 to 92 years and 303 to 317 years, respectively.

Exhibit G-39—Net Energy Use and GHG Emissions as Compared with Base Alternative, Alternative 90A

	Energy Use (million Btu)	GHG Emissions (metric tons CO ₂ e)
Rail Operation (per year)	335,567	24,641
Rail Maintenance (per year)	47,827	3,501
On-Road Maintenance (per year)	-22,348	-1,636
On-Road Operation (per year)	-684,691	-54,230
Net (per year)	-323,645	-27,724
Construction (total)	7,496,478	548,762
Offset Period (years)	23	20
Notes: Negative numbers indicate reduction as compared to Base Alternative. Includes well-to-pump emissions for both on-road and rail components.		

Exhibit G-40—Net Energy Use and GHG Emissions as Compared with Base Alternative, Alternative 110

	Energy Use (million Btu)	GHG Emissions (metric tons CO ₂ e)
Rail Operation (per year)	404,035	29,669
Rail Maintenance (per year)	47,827	3,501
On-Road Maintenance (per year)	-26,962	-1,974
On-Road Operation (per year)	-823,256	-65,204
<i>Net (per year)</i>	-398,355	-34,008
Construction (total)	36,468,799	2,669,614
Offset Period (years)	92	78
Notes: Negative numbers indicate reduction as compared to Base Alternative. Includes well-to-pump emissions for both on-road and rail components.		

Exhibit G-41—Net Energy Use and GHG Emissions as Compared with Base Alternative, Alternative 125

	Energy Use (million Btu)	GHG Emissions (metric tons CO ₂ e)
Rail Operation (per year)	635,672	52,398
Rail Maintenance (per year)	133,071	9,741
On-Road Maintenance (per year)	-42,464	-3,109
On-Road Operation (per year)	-1,290,655	-102,221
<i>Net (per year)</i>	-564,376	-43,191
Construction (total)	178,996,609	13,103,131
Offset Period (years)	317	303
Notes: Negative numbers indicate reduction as compared to Base Alternative. Includes well-to-pump emissions for both on-road and rail components.		

19.2.2 Preferred Alternative

The long-term impact of the Preferred Alternative (Alternative 90B) on energy and greenhouse gas emissions is ultimately always positive, as the on-road benefits persist year after year and eventually offset the initial construction impacts (see Exhibit 4-27). Alternative 90B would result in an annual reduction of energy use (of approximately 391,000 million BTu) and greenhouse gas emissions (approximately 33,000 metric tons of CO₂ equivalent [CO₂e]) over the Base Alternative. The net annual operational benefits for the Preferred Alternative would total approximately 391 billion Btu per year and 28,000 to 33,000 metric tons CO₂e per year. This is roughly equivalent to eliminating the emissions associated with the energy and electricity consumption of 2,500 to 4,200 average U.S.

single family homes every year.³⁸

Alternative 90B would have a potential beneficial impact starting approximately 47 to 50 years after construction. Note that the method for estimating the construction emissions has a large level of uncertainty associated with it, and the Congressional Budget Office has suggested that this method substantially overestimates the impact of construction.³⁹ If, for example, this conservative estimate is overestimated by a factor of five, the time required to offset construction emissions could range from 4 to 60 years, which may be considered a reasonable payback period.

19.2.3 Discussion

Potential Impacts of Climate Change

The analysis of impacts of climate change on the program focuses on potential changes in sea level in the context of flooding. Existing scientific studies and information available from New York City and State sources were reviewed, and relevant information is presented. Due to the uncertain nature of predictions for future climate change impacts, a range of possible effects is presented. While future changes in other climate parameters such as temperature, storm frequency, and precipitation may have some effect on rail operations, the projections for these parameters are much less certain at this time and are therefore not addressed here.

In 2016, DEC established sea-level rise projections for three specified geographic regions over various time intervals as part of Part 490 in Environmental Conservation Law⁴⁰, recently added in 2014 by New York State's Community Risk and Resiliency Act. In the lower Hudson Valley, sea levels are likely to increase by 15 to 75 inches by the end of the century, and in the Mid-Hudson Valley, sea levels are likely to increase by 11 to 71 inches by the end of the century. In general, the probability of sea levels increasing is characterized as "extremely likely." Intense hurricanes are characterized as 'more likely than not' to increase in intensity and/or frequency, and the likelihood of changes in other large storms ("Nor'easters") are characterized as unknown. Therefore, the projections for future 1-in-100 coastal storm surge levels for the area include only sea level rise at this time and do not account for changes in storm frequency.

Note that in light of more recent scientific analyses, as reported by the Intergovernmental Panel on Climate Change (IPCC) and as reviewed by the New York City Panel on Climate Change (NPCC), it is reasonable to assume that sea level and floodplains would rise by up to 2.0 feet by the end of the century, with a chance of increases up to 4.5 feet at the upper estimate of the middle range scenario. The best available data would be reviewed when planning to specific elevations occurs.

Most of the rail line from New York City to Albany runs along the eastern shore of the Hudson Estuary, much of that within current floodplains or immediately adjacent to the 1-in-100 floodplain (the area with a flooding probability of 1-in-100 in any given year). Some of these areas are already vulnerable to flooding in the current condition, and by the end of the century, all areas along the shore would be within the floodplain.

³⁸ Based on U.S. EPA's GHG Equivalencies Calculator, <<http://www.epa.gov/cleanenergy/energy-resources/calculator.html>>.

³⁹ U.S. Congress—Congressional Budget Office, Urban Transportation and Energy: The Potential Savings of Different Modes, December 1977.

⁴⁰ New York State Department of Environmental Conservation. *Part 490, Projected Sea-level Rise*.
<https://www.dec.ny.gov/regulations/119069.html>

The current program does not propose rebuilding this existing rail line, but rather adjusting and upgrading various small sections along the existing line, and therefore, cannot accomplish major changes such as raising the elevation of the track or relocating track to areas outside of the future floodplain. However, NYSDOT will coordinate with state and federal agencies regarding potential actions for adapting to future climate conditions in order to avoid repeated construction work. Potential mitigation strategies to address sea level rise/flooding are addressed under Section 4.20.5 of the Tier 1 Final EIS.

For the non-electric alternatives, rail energy and emissions slightly increase from Alternative 90A to Alternative 90B (the Preferred Alternative) to Alternative 110 due to the slight increase in train trips and the increased acceleration and deceleration for the 110 Alternative in locations where the track is not capable of supporting the 110-miles per hour speed. Alternative 125 would have substantially more rail energy and emissions associated with added train trips, including both diesel and indirect electricity emissions.

The benefits from removing vehicle trips from the road trend in the opposite direction with ridership and the ensuing energy and emissions benefits increase from Alternative 90A to Alternative 90B (the Preferred Alternative) to Alternative 110, and are substantially higher for Alternative 125. The net annual operational benefits range from approximately 323 to nearly 564 billion Btu per year and 28,000 to 43,000 metric tons CO₂e per year. This is roughly equivalent to eliminating the emissions associated with the energy and electricity consumption of 2,500 to 4,200 average U.S. single family homes every year.⁴¹

The total potential annual operational emissions savings, the initial investment of energy and associated emissions from construction activity and the production and delivery of materials used for construction, and the net energy and emissions payback period are presented in Exhibit G-39 through Exhibit G-41, above. Alternative 90A has the smallest annual benefit but would also require the shortest period to offset the emissions, 20 years, while Alternative 125 with the largest annual benefit would require the longest period to offset those emissions—317 years.

The differences between the alternatives are mostly based on the construction emissions since the ridership differences are comparatively small. Given the potential for other future changes aimed at reducing the footprint of energy use such as renewable electricity and fuels, it is unlikely that the construction emissions from Alternative 90B (the Preferred Alternative) or Alternatives 110, or 125 would ever actually be offset, given potential future changes in on-road technology. Regardless, from a global climate perspective, if it did require 50 years or more to payback the emissions, no real benefit would be shown this century, which is the main focus of current climate analyses.

Note that the method for estimating the construction emissions has a large level of uncertainty associated with it, and the Congressional Budget Office has suggested that this method substantially overestimates the impact of construction.⁴² If, for example, this conservative estimate is overestimated by a factor of five, the time required to offset construction emissions could range from 4 to 60 years, which may be considered a reasonable payback period.

⁴¹ Based on U.S. EPA's GHG Equivalencies Calculator, <<http://www.epa.gov/cleanenergy/energy-resources/calculator.html>>.

⁴² U.S. Congress—Congressional Budget Office, Urban Transportation and Energy: The Potential Savings of Different Modes, December 1977.

20. Contaminated and Hazardous Material

20.1 Existing Conditions

20.1.1 Empire Corridor South

All of the Build Alternatives follow the existing Empire Corridor South for the majority of its length, deviating only in Rensselaer County, where Alternative 125 splits off 1.6 miles south of where the existing Empire Corridor turns to the west. The 90/110 Study Area has a total of 4,140 sites, of which 3,748 are in Manhattan (New York County). The 125 Study Area has a total of 4,135 sites, of which the same 3,748 are in Manhattan (New York County). The major feature along the Empire Corridor South is the Hudson River.

The Hudson River PCBs (polychlorinated biphenyl) Superfund Site is located in all of the counties along the 142-mile Empire Corridor South. This site encompasses a nearly 200-mile stretch of the Hudson River extending from Hudson Falls to Battery Park in New York City.⁴³ From approximately 1947 to 1977, General Electric Company (GE) discharged as much as 1.3 million pounds of PCBs from its capacitor manufacturing plants at the Hudson Falls and Fort Edward facilities into the Hudson River. As a result, the primary health risk associated with the site is the accumulation of PCBs in the human body through eating contaminated fish. PCBs are considered probable human carcinogens and are linked to other adverse health effects such as low birth weight, thyroid disease, and learning, memory, and immune system disorders. PCBs in the river sediment also affect fish and wildlife.

In February 2002, the U.S. EPA issued a Record of Decision (ROD) for the Hudson River PCBs Superfund Site that calls for targeted environmental dredging of approximately 2.65 million cubic yards of PCB-contaminated sediment from a 40-mile section of the Upper Hudson River extending north of Troy, upstream of the study area. The cleanup will occur in two phases. Phase 1 of the project was conducted by GE with oversight by the U.S. EPA from May to November 2009. During this phase, approximately 283,000 cubic yards of PCB-contaminated sediment was removed from a six-mile stretch of the Upper Hudson River near Fort Edward, New York. In the study area, removal of PCB and lead in contaminated soils was also performed on Rogers Island in Columbia County. The U.S. EPA determined it was necessary to remove contaminated soils on the north side of the island. Phase 2 will remove the remainder of the contaminated river sediment targeted for dredging and it will take five to seven years to complete.

Exhibit G-42 summarizes the contaminated and hazardous materials sites within the Empire Corridor. **New York County** has the most contaminated and hazardous material sites of any county in the Empire Corridor South Segment. The majority of these, 3,667, are Petroleum Bulk Storage (PBS) sites. In addition, there are 64 RCRA sites, six TRIS sites and 11 Chemical Bulk Storage (CBS) sites.

Bronx County has a total of 116 sites, mostly PBS (115) and RCRA (one).

Westchester County has 52 contaminated and hazardous material sites with 16 RCRA sites, 15 TRIS sites, 12 CBS sites, five MOSF sites, three PBS sites and one Superfund site. The majority of these sites are located near the cities of Yonkers, Tarrytown, Ossining and Peekskill.

⁴³ United States Environmental Protection Agency, "Hudson River PCBs." Accessed September 26, 2011. <<http://www.epa.gov/hudson/>>.

Exhibit G-42—Summary of Contaminated and Hazardous Materials Sites within the Study Area

County	NPL		Superfund		RCRA		TRIS		CBS		PBS		MOSF		Total	
	90/ 110 mph	125 mph	90/ 110 mph	125 mph	90/ 110 mph	125 mph	90/ 110 mph	125 mph	90/ 110 mph	125 mph	90/ 110 mph	125 mph	90/ 110 mph	125 mph	90/ 110 mph	125 mph
New York	0	0	0	0	64	64	6	6	11	11	3,667	3,667	0	0	3,748	3,748
Bronx	0	0	0	0	1	1	0	0	0	0	115	115	0	0	116	116
Westchester	0	0	1	1	16	16	15	15	12	12	3	3	5	5	52	52
Putnam	1	1	1	1	0	0	0	0	0	0	12	12	0	0	14	14
Dutchess	0	0	1	1	5	5	5	5	5	5	87	87	3	3	106	106
Columbia	0	0	0	0	0	0	2	2	0	0	11	11	0	0	13	13
Rensselaer	0	0	2	2	9	9	10	10	10	10	51	47	9	8	91	86
Albany	1	0	1	0	13	10	9	2	9	4	155	51	0	1	188	68
Schenectady	0	0	0	0	1	0	3	2	2	0	106	34	2	0	114	36
Schoharie	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Montgomery	0	0	1	0	10	0	4	2	5	0	119	1	0	0	139	3
Herkimer	0	0	0	0	7	0	6	0	4	1	110	3	0	0	127	4
Oneida	1	0	3	2	11	3	12	2	8	2	244	20	2	0	281	29
Madison	0	0	0	0	0	0	2	3	4	3	12	23	0	0	18	29
Onondaga	0	0	2	2	17	17	23	22	17	17	178	180	1	1	238	239
Cayuga	0	0	0	0	1	0	0	0	1	0	9	1	0	0	11	1
Wayne	0	0	0	1	7	0	8	1	5	0	59	23	1	0	80	25
Monroe	0	0	6	6	41	38	43	42	17	16	265	262	1	1	373	365
Genesee	0	0	0	0	2	0	6	0	8	0	148	21	0	0	164	21
Erie	0	0	10	10	35	35	54	53	13	14	334	322	1	1	447	435
Niagara	2	2	5	5	8	8	12	12	7	7	56	56	1	1	91	91
Total	5	3	33	31	248	206	220	179	138	102	5,741	4940	26	21	6,411	5,482

Note 1: NPL – National Priority List, RCRA – Resource Conservation and Recovery Act, TRIS – Toxic Release Inventory System, CBS – Chemical Bulk Storage, PBS – Petroleum Bulk Storage, MOSF – Major Oil Storage Facility.

Note 2: The 90/110 Study Area is used for analysis of Alternatives 90A, 90B, and 110 and consists of the existing 464-mile long Empire Corridor alignment. The 125 Study Area is used for analysis of Alternative 125 and consists of portions of the existing Empire Corridor and new alignment and is 450 miles long. The study area width is defined as being within a half-mile of the corridor centerline.

Source: NYS GIS Clearinghouse, New York State Department of Environmental Conservation.

NYSDEC. Accessed November 7, 2011. <<http://www.dec.ny.gov/geodata/DiscoveryServlet>>.

U.S. EPA. Accessed November 7, 2011. <http://www.epa.gov/enviro/geo_data.html>.

Putnam County has the fewest contaminated and hazardous material sites in Empire Corridor South with 12 PBS sites, one NPL and one Superfund site. The majority of these sites are located in the town of Cold Spring.

Dutchess County has 106 contaminated and hazardous material sites, the majority of which are located in the city of Beacon, Crown Heights and in/around the city of Poughkeepsie. There are 87 PBS sites, five RCRA sites, five TRIS and CBS sites, three MOSF sites and one Superfund site.

Columbia County has 13 contaminated and hazardous material sites with 11 PBS sites and two TRIS sites. The majority of these sites are located in the city of Hudson.

In **Rensselaer County** the 90/110 Study Area has 91 contaminated and hazardous material sites with 51 PBS sites, nine RCRA sites, 10 TRIS and CBS sites, nine MOSF sites and two Superfund sites. The 125 Study Area has 86 contaminated and hazardous material sites with 47 PBS sites, nine RCRA sites, 10 TRIS and CBS sites, eight MOSF sites and two Superfund sites. The majority of these are located in the city of Rensselaer.

20.1.2 Empire Corridor West/Niagara Branch: 90/110 Study Area

The Empire Corridor West/Niagara Branch 90/110 Study Area has a total of 2,271 sites, less than the Empire Corridor South. The majority are located in the more urbanized counties in: Erie County (447 sites), Monroe County (373 sites), Oneida County (281 sites), and Onondaga County (238 sites).

Albany County has 188 contaminated and hazardous material sites, the majority of which are located in the city of Albany. There are 155 PBS sites, 13 RCRA sites, nine TRIS and CBS Sites, one NPL and one Superfund site.

Schenectady County has 114 contaminated and hazardous material sites with 106 PBS sites, one RCRA site, three TRIS sites, two CBS and two MOSF sites. The majority of these sites are located in and around the city of Schenectady.

Montgomery County has 139 contaminated and hazardous material sites with 119 PBS sites, 10 RCRA sites, five CBS sites, four TRIS sites and one Superfund site. The sites are generally located in the larger cities/towns such as the city of Amsterdam, Fonda, the town of Canajoharie, Fort Plain and the town of St. Johnsville.

Herkimer County has 127 contaminated and hazardous material sites, mostly located in the city of Little Falls and Ilion. There are 110 PBS sites, seven RCRA sites, six TRIS sites and four CBS sites.

Oneida County has 281 contaminated and hazardous material sites with 244 PBS sites, 11 RCRA sites, 12 TRIS sites, eight CBS sites, three Superfund sites, two MOSF sites and one NPL site. The majority of these sites are located in and around the city of Utica and the city of Rome.

Madison County has 18 contaminated and hazardous material sites with 12 PBS sites, four CBS sites and two TRIS sites. The majority of these sites are located in the city of Oneida and the village of Canastota.

Onondaga County has 238 contaminated and hazardous material sites, the majority of which are located in and around the city of Syracuse. There are 178 PBS sites, 17 RCRA sites, 23 TRIS sites, 17 CBS sites, two Superfund sites and one MOSF site.

Cayuga County has 11 contaminated and hazardous material sites, the fewest in the Empire Corridor West/Niagara Branch segment including one RCRA site, nine PBS sites and one CBS site. The majority of these sites are located in the village of Weedsport.

Wayne County has 80 contaminated and hazardous material sites, the majority of which are located in the town of Savannah, village of Clyde, village of Lyons and the town of Palmyra. There are 59 PBS sites, seven RCRA sites, eight TRIS sites, five CBS sites and one MOSF site.

Monroe County has 373 contaminated and hazardous material sites with 41 RCRA sites, 265 PBS sites, 43 TRIS sites, 17 CBS sites, six Superfund sites and one MOSF site. The majority of these sites are located in and around the city of Rochester.

Genesee County has 164 contaminated and hazardous material sites with 148 PBS sites, two RCRA sites, eight CBS sites and six TRIS sites. The majority of these sites are located in the town of Bergen and the city of Batavia.

Erie County has 447 contaminated and hazardous material sites, the most in the Empire Corridor West/Niagara Branch segment. The majority of these sites are located in the city of Buffalo and the city of Tonawanda. There are 35 RCRA sites, 334 PBS sites, 54 TRIS sites, 13 CBS sites, 10 Superfund sites and one MOSF site.

Niagara County has 91 contaminated and hazardous material sites in the Empire Corridor West/Niagara Branch segment with eight RCRA sites, 56 PBS sites, seven CBS sites, 12 TRIS sites, five Superfund sites, two NPL sites and one MOSF site. The majority of these sites are located in the city of North Tonawanda and the city of Niagara Falls.

20.1.3 Empire Corridor West/Niagara Branch: 125 Study Area

The 125 Study Area follows a more direct route between Rensselaer and Buffalo, which bypasses several of the major metropolitan areas and stations sites (Schenectady, Amsterdam, Utica, and Rome). The Empire Corridor West/Niagara Branch 125 Study Area has a total of 1,347 sites. The majority are located in the more urbanized counties in: Erie County (435 sites), Monroe County (365 sites), and Onondaga County (239 sites).

Albany County has 68 contaminated and hazardous material sites, the majority of which are located in the city of Albany. There are 51 PBS sites, 10 RCRA, two TRIS, four CBS, one MOSF site.

Schenectady County has 36 contaminated and hazardous material sites with 34 PBS sites and two TRIS sites. The majority of these sites are located in and around the city of Rotterdam.

Schoharie, Montgomery and Herkimer counties have very few contaminated and hazardous material sites. There is a single PBS site in the study area within **Schoharie County** and only three total sites in **Montgomery County**: two TRIS sites and one PBS site. The study area within **Herkimer County** has a total of four contaminated and hazardous materials sites: three PBS and one CBS site. The corridor passes through primarily rural land in these three counties, which likely accounts for the low number of contaminated and hazardous materials sites.

Oneida and Madison counties both have 29 contaminated and hazardous material sites. In **Oneida County**, there are 20 PBS sites, three RCRA, two TRIS, two CBS, and two Superfund sites. The majority of these sites are located in and around the towns of Clinton and Sherrill. In **Madison County**, there are 23 PBS sites, three TRIS and three CBS sites. The majority of these sites are located in and around the cities of Oneida and Canastota.

Onondaga County has 239 contaminated and hazardous material sites, the majority of which are located in and around the city of Syracuse. There are 180 PBS sites, 17 RCRA, 22 TRIS, 17 CBS, two Superfund sites and one MOSF site.

Cayuga County only has a single contaminated and hazardous material site, a PBS site. Along with Schoharie County, this has the fewest sites in the Empire Corridor West/Niagara Branch 125 Study Area.

Wayne County has 25 contaminated and hazardous material sites scattered along the corridor. There are 23 PBS sites, one TRIS and one Superfund site.

Monroe County has 365 contaminated and hazardous material sites with 38 RCRA sites, 262 PBS sites, 42 TRIS sites, 16 CBS sites, six Superfund sites and one MOSF site. The majority of these sites are located in and around the city of Rochester.

Genesee County has 21 contaminated and hazardous material sites scattered along the corridor, all of which are PBS sites.

Erie County has 435 contaminated and hazardous material sites, the most in the Empire Corridor West/Niagara Branch 125 Study Area, the majority of which are located in the city of Buffalo and the city of Tonawanda. There are 35 RCRA sites, 322 PBS, 53 TRIS, 14 CBS, 10 Superfund sites and one MOSF site.

Niagara County has 91 contaminated and hazardous material sites in the Empire Corridor West/Niagara Branch segment with eight RCRA sites, 56 PBS sites, seven CBS sites, 12 TRIS sites, five Superfund sites, two NPL sites and one MOSF site. The majority of these sites are located the city of North Tonawanda and the city of Niagara Falls.

20.2 Environmental Consequences

Chapter 4 of the Tier 1 Final EIS addresses and compares the impacts of the Preferred Alternative, Alternative 90B, to those of the other alternatives considered (refer to Section 4.22). The potential effects of the Base Alternative and the other Build Alternatives are described in more detail below.

20.2.1 Base Alternative

The Base Alternative represents the baseline condition against which the alternatives are measured and incorporates improvements that have already been programmed and have been constructed. The Tier 1 Draft EIS addressed the potential impacts of the eight projects included in the Base Alternative. The Base Alternative will maintain weekday service frequencies. Because proposed work with this alternative was anticipated to be located entirely within the right-of-way, no land acquisitions were anticipated, minimizing the potential for liability since NYSDOT would not have acquired additional property. In general, signal and grade crossing work would have a low potential for encountering contaminated materials. The track improvements were to be completed within the existing right-of-way. However, any subsurface work activities (e.g. excavation, trenching etc.) would have the potential to encounter contaminated materials that could require special handling and disposal requirements.

20.2.2 Alternative 90A

NYSDOT anticipates that work will be contained within the right-of-way, and thus no land acquisitions are expected; therefore, impacts would be similar to those described in the Base Alternative with the potential for encountering contaminated materials increasing with subsurface work.

In addition, Alternative 90A would include replacement of the Livingston Avenue Bridge, which extends over the Hudson River between the urbanized cities of Rensselaer and Albany (Rensselaer and Albany counties, respectively). The replacement of the bridge would include extensive subsurface activities (i.e. installation of footings and piers) and therefore the potential to encounter contaminated soils and groundwater would be high. In addition, given the presence of the Hudson River polychlorinated biphenyl (PCB) site, there would be a higher likelihood that PCB-impacted sediment and surface water will be encountered during bridge construction activities.

20.2.3 Alternative 110

Similar to the Alternative 90B, the majority of work for Alternative 110 would be completed within the existing right-of-way. There would be 18 locations where new right-of-way would need to be acquired (MPs 168.3, 184.6, 186.3, 191.7, 198.1, 200.6, 207.5, 210.8, 215.1, 226.9, 228.0, 230.8, 237.2, 286.4, 341.1, 361.4, 377.7 and 389.1). As with Alternative 90B, the acquisition of property would include a potential liability for NYSDOT if the properties currently or historically used, stored or disposed of hazardous materials or petroleum products. Property acquisition would also include the acquisition of two current structures, which would require asbestos, lead and hazardous material surveys prior to demolition activities.

Two grade separated flyovers would be located at MPs 279 and 366. As with Alternative 90B, the flyover at MP 279 would be located in a more rural area, and no mapped hazardous materials facilities are in the vicinity of the alignment. The flyover at MP 366 is located in the more urban area of Rochester, and there would be mapped PBS facilities located in the vicinity of the improvements. These structures would have a higher likelihood to encounter contaminated soil and groundwater as a result of caisson and abutment construction.

As with Alternative 90B, Alternative 110 would also include station improvements at the Schenectady, Amsterdam, Utica, Rome, Syracuse, Rochester and Buffalo-Depew stations. Station improvements may entail a greater potential for subsurface excavations that could encounter contaminated soils and groundwater.

20.2.4 Alternative 125

Construction of new track and alignment would have the potential to encounter contaminated soils and/or groundwater since subsurface work would be more likely for this new alignment than for additional track within the existing railroad right-of-way. Alternative 125 would generally parallel the New York State Thruway through the cities of Albany and Schenectady. After leaving the City of Schenectady, the alignment would generally cross rural lands, with the exception of urban sections of Syracuse, Rochester, and Buffalo, where the 125 alignment rejoins to extend alongside the Empire Corridor. Mapped hazardous materials facilities would be located sporadically in the vicinity of the new alignment throughout the rural land, with more densely mapped hazardous materials facilities located in Albany and Schenectady.

Through the cities of Syracuse and Rochester, Alternative 125 would be within the existing Empire Corridor right-of-way; however, there would be numerous mapped hazardous materials facilities adjacent to the alignment in Syracuse, and there would be potential to encounter contaminated materials with the construction of new track depending on requirements for subsurface activities.

Since Alternative 125 would involve 236 miles of construction of new right-of-way, there would be numerous property acquisitions for the alignment. The acquisition of property would include a potential liability for NYSDOT if the properties currently or historically use, store or dispose of hazardous materials or petroleum products. In addition, property acquisition would also include the acquisition of numerous structures, which would require asbestos, lead and hazardous material surveys prior to demolition activities.

21. Indirect and Cumulative Impacts

Indirect and cumulative impacts include reasonably foreseeable actions and proposed and planned actions, both by NYSDOT and by other agencies. This Tier 1 evaluation presents a generalized assessment of these impacts based on Tier 1 concepts that would be further refined in the Tier 2, once the scope and timing of improvement projects are better defined.

Section 4.24 examines the indirect and cumulative impacts of the Preferred Alternative. This section presents the context for the evaluations and the indirect and cumulative impacts of the other alternatives considered.

21.1 Methodology

For the Tier 1 analysis, the indirect impacts were qualitatively addressed for the program on a generalized basis. This cumulative impact assessment involved researching projects listed on New York State Rail Plan, the NYSDOT *Statewide Transportation Improvement Program for Federal Fiscal Years 2020 – 2023* for the different planning regions in the study area, as well as *Amtrak's Northeast Corridor Capital Investment Plan Fiscal Years 2020-2024*. Some of the projects listed in the vicinity of the study area and are in the planning phases but are projected to be built in the same timeframe as the Tier 2 program.

21.2 Considerations for Impact Assessment

21.2.1 Indirect Impacts

- **Traffic and Transportation:** Increased traffic can occur if the program induces secondary development.
- **Land Use:** Changes in land uses or land use patterns can arise if secondary development occurs as a result of the program, potentially causing an increase in property values or the intensity or patterns of land use development.
- **Employment, Population, and Businesses:** Indirect impacts resulting from improvements in passenger rail service have the potential to affect changes in socioeconomic conditions, such as employment and population, and can positively affect business sales and revenues.

- **Environmental Justice and Community Facilities:** Secondary development, or development induced by mobility and access improvements, has the potential to affect communities and environmental justice populations through changes in development patterns, traffic, or property values.
- **Coastal/Water Resources and Floodplains:** Secondary development can result in direct or indirect effects on surface waters, aquifers, floodplains, and wetlands.
- **Ecology and SEQR Critical Areas:** Secondary development has the potential to directly or indirectly affect aquatic and wildlife habitats and critical areas protected under SEQR.
- **Cultural Resources, Parks, Visual Resources:** Secondary development may have the potential to affect historic or archaeological sites, parks, or scenic landscapes, although any impacts are likely to require mitigation, including potential provision of historic mitigation and additional parklands or other amenities.
- **Farmlands:** Secondary development has the potential to affect actively farmed lands and prime farmland soils or soils of statewide importance.
- **Air Quality, Noise, Energy/Climate Change:** Increased traffic from secondary development has the potential to increase noise and emissions of air pollutants, which can affect energy use and climate change.
- **Contaminated and Hazardous Materials:** Secondary development has the potential to affect either existing contaminated or hazardous materials sites or the generation of contaminated/hazardous materials.

21.2.2 Cumulative Impacts

A review of the New York State Department of Transportation Improvement Program was performed to identify projects in the vicinity of the Empire Corridor that may involve capacity improvements (see Exhibit G-43). The projects identified included the following:

- Moynihan Station Redevelopment/Improvements, Manhattan (New York County), New York City;
- Penn Station Access Improvements, New York City;
- Amtrak's Gateway Project for Expanded Trans Hudson Heavy/Commuter Rail Capacity;
- Route 17 Upgrade to I-86: Exit 130A to 131;
- New Highway Construction, John B. Daly Boulevard Extension from Niagara Street to Pine Avenue, City of Niagara Falls (Niagara County).

Exhibit G-43—Projects in the Vicinity of the Empire Corridor

Other Transportation Projects and Location	Project Description	Implementation
Moynihan Station Redevelopment/Improvements Manhattan, New York County – Pennsylvania Station	Phase 1: <ul style="list-style-type: none"> Two new entrances through the Farley building Extension of the West End Concourse to serve 8 additional tracks Doubling of concourse width New stairs, escalators, and elevators from the platforms up to the station to meet ADA requirements Contracted Phase 1 at \$147.75 million Future Work <ul style="list-style-type: none"> When completed, the \$2.5 billion program includes this redevelopment in the main building and its annex, as well as renovation of the 7th and 8th Avenue subway stations. 	Phase 1: <ul style="list-style-type: none"> Began October 2012-completed
Penn Station Access Improvements	<ul style="list-style-type: none"> Enhanced pedestrian flows, lighting, stairway and platform access, commercial layout, affecting Long Island Railroad, Metro-North Railroad, and Amtrak service Replacement of the catenary system Addition of four new stations, reconfigured interlockings, bridge rehabilitation, and additional power and communication infrastructure Environmental Assessment and Section 4(f) Evaluation issued for public and agency review. Approved funding, \$695M 	2017-2021
Amtrak's Gateway Project: Hudson Tunnel Project	<ul style="list-style-type: none"> Addition of two trans-Hudson Amtrak tunnels to double peak hour capacity between New Jersey and Penn Station System modernization including electrification and replacing damaged components from Super Storm Sandy Hudson Tunnel Project to be started within next 4 years. Total project cost, \$15.2B 	FRA/Amtrak Project (2026)
Amtrak's Gateway Project - Portal North Bridge	<ul style="list-style-type: none"> Replace Portal Bridge with a high-level, 2-track fixed span bridge. Increase rail transit capacity by 11% 	Construction began 2017
MTA Metro-North Railroad	<ul style="list-style-type: none"> Grand Central Terminal Trainshed and Park Avenue Tunnel & Viaduct: \$895M for Phase 1 Station renewals on the Harlem Line in the Bronx and Lower Westchester and capacity improvements 	2020-2024
NYC EDC Hunts Point Terminal Market Freight Rail Bronx	<ul style="list-style-type: none"> Modernization of the terminal market to increase the efficiency and environmental sustainability of the market which consists of freight rail and traffic circulation improvements \$50-85M 	2022-2023
Yonkers Greenway Project Bronx and Westchester	<ul style="list-style-type: none"> Construction of a multi-use trail to provide connections between the MTA subway in the Bronx to the MNR and Amtrak rail station and bus hub in Yonkers \$3.3-5.6M 	2022
Route 17 Upgrade to I-86 Woodbury, Orange County – Route 17 Exit 130 to 131A.	<ul style="list-style-type: none"> 7 miles west of MP 44 on existing Empire Corridor Add ramp from Route 32 SB to Route 17 EB Est. \$50.4 million 	Construction Summer 2017 through Summer 2018
NYSDOT MNR Improvements Dutchess	<ul style="list-style-type: none"> Repair and replace bridge elements on the Route 82 bridge over the Metro-North Rail Line, \$7.5-12M 	2022-2023
Comprehensive Plan for the Amherst-Buffalo Metro Rail Corridor Erie	<ul style="list-style-type: none"> NFTA, comprehensive plan to support TOD along the Amherst-Buffalo metro rail corridor, creation of a regional TOD fund, \$0.6-1.5M 	2020
John B. Daly Boulevard Extension Niagara Falls, Niagara County –	<ul style="list-style-type: none"> New highway construction, est. \$6-9.4M Pedestrian improvements and resurfacing, \$7.5-12M 	Construction through 2022

Of these projects, the initiatives that may have more of a regional effect include the Penn Station Access Improvements, which may have the potential for secondary development impacts in downtown Manhattan, and the Amtrak Gateway project, which would double rail access/egress capacity to/from Penn Station from/to New Jersey and points south via NJ TRANSIT and/or Amtrak. Improvements to Penn Station would also ease congestion and increase the station's appeal for accessing Amtrak intercity services in a similar time frame.

Interchange improvements proposed and highway widening can create the potential for more traffic, and this could create cumulative and secondary development impacts in the area of the improvements.

21.3 Environmental Consequences

Chapter 4 of the Tier 1 Final EIS addresses and compares the impacts of the Preferred Alternative, Alternative 90B, to those of the other alternatives considered, including the Base Alternative (refer to Section 4.24). Major new infrastructure investments, such as improvements to high-speed rail service, could potentially change the population and employment outlook. For example, according to a U.S. Conference of Mayor's Report, which examined the impact of high-speed rail upon the City of Albany, the introduction of high-speed rail along the corridor can contribute substantially to economic growth by driving higher-density, mixed-use development at train stations; expanding visitor markets and generating additional spending; broadening regional labor markets; and supporting the growth of technology clusters.⁴⁴ The potential effects of Base and the other Build Alternatives are described in more detail below.

21.3.1 Base Alternative

The station improvements recently constructed have the greatest potential to increase economic benefits to these two downtown areas, although the track improvements proposed will benefit freight movements (thereby offering indirect economic benefits to the industries served) as well as passenger rail service. With the Base Alternative, the potential for secondary development is relatively low. However, of the Base Alternative improvements, the recently completed relocation of the Niagara Falls Station from an industrial site outside the downtown to the former custom house building in downtown Niagara Falls has the greatest potential to improve the vitality of the downtown business district. Upgrades to the Schenectady and Rochester Stations also have a greater potential to support businesses in downtown Schenectady and Rochester than the other improvements comprising the Base Alternative.

This alternative has the lowest potential for secondary development and the ensuing environmental impacts (traffic, land use, community, wetlands, parklands, air quality, noise, etc.) of the alternatives under consideration, particularly since both Schenectady and Rochester were existing station sites, and the Schenectady Station was not relocated. Moreover, since both of the station sites are located in heavily urbanized areas, the potential for impacts to undeveloped lands, farmlands, and natural resources, such as wetlands, endangered species habitats, and farmlands impacts were also lower. Any secondary development in these urban locations is likely to involve redevelopment of existing developed sites. Although secondary development or redevelopment and changes in land use may not have been anticipated to occur under the Base Alternative, the Base Alternative may produce

⁴⁴ Economic Development Research Group, Inc. *The Economic Impact of High Speed Rail and Cities and their Metropolitan Areas*. Prepared for the U.S. Conference of Mayors (undated), released June 2010.

more indirect economic effects (increase in property values, increased business sales, increase in jobs) for the downtown areas.

21.3.2 Alternative 90A

The station improvements have the greatest potential to increase economic benefits to these cities, although the track improvements proposed will benefit freight movements (thereby offering indirect economic benefits to the industries served) as well as passenger rail service.

Secondary impacts would be similar to those described for the Base Alternative, with the highest potential for benefits and secondary development anticipated with new station buildings to be constructed at Amsterdam and Buffalo-Depew Stations. There may be more potential for secondary development in the City of Buffalo, as this station is more centrally located to business or industrial districts and is also a larger city. However, the Buffalo-Depew Station is located within an industrial area and physically isolated from nearby commercial activity. The existing Amsterdam Station is located on the western outskirts of the City of Amsterdam, and land use patterns include established residential neighborhoods, with limited commercial development or zones scattered in the surrounding area and somewhat removed from the existing station. If the new station buildings for Buffalo-Depew and Amsterdam are relocated closer to established commercial activity centers, there would be an increased potential for secondary development.

However, similar to the Base Alternative, this alternative has relatively low potential for secondary development and the ensuing environmental impacts (traffic, land use, community, wetlands, parklands, air quality, noise, etc.), given the type and degree of development around the existing station sites and the nature and limited scope of the proposed improvements. Moreover, since two of the station sites are located in heavily urbanized areas, the potential for impacts to undeveloped lands, farmlands, and natural resources, such as wetlands, and endangered species habitats impacts are also lower. Any secondary development in these urban locations is likely to involve redevelopment of existing developed sites. Although secondary development or redevelopment and changes in land use may not occur under the Alternative 90A, this alternative may produce greater indirect economic effects (increase in property values, increased business sales, increase in jobs) for the downtown areas served than the Base Alternative.

21.3.3 Alternative 110

With the added improvements in passenger rail service, this alternative would have a greater potential than the Base/90A/90B Alternatives to increase economic benefits to cities primarily at the station sites, although the track improvements proposed will benefit freight movements (thereby offering indirect economic benefits to the industries served) as well as passenger rail service. The highest potential for secondary development may occur at urban centers with station sites, given the availability of urban land to accommodate new development or redevelopment of existing developed sites. This effect may be more pronounced in the cities where express service will be provided: Niagara Falls, Buffalo-Exchange Street, Buffalo-Depew, Rochester, Syracuse, Albany-Rensselaer and New York City (Penn Station). However, if the factors are in place to support new development at less urban station sites (availability of land, zoning, infrastructure, market forces, etc.), there is a somewhat greater potential for larger changes in land use should redevelopment occur at more remotely located stations.

This alternative would have a greater potential for secondary development than the Base/90A/90B Alternatives due to the additional improvements in passenger rail service. However, the potential for any environmental impacts (traffic, land use, community, wetlands, parklands, air quality, noise, etc.) is minimized to some extent by the heavily urbanized nature of areas around many of the existing stations, which would limit the potential for impacts to undeveloped lands, farmlands, and natural resources, such as wetlands, and endangered species habitats. Any secondary development in these urban locations is likely to involve redevelopment of existing developed sites. Although secondary development or redevelopment and changes in land use may not occur under Alternative 110, this alternative may produce more beneficial economic effects (increase in property values, increased business sales, increase in jobs) for the downtown areas than the Base/90A/90B Alternatives.

21.3.4 Alternative 125

Although the 125 Study Area involves new construction along 236 miles, no new stations would be constructed on the new alignment, so secondary development impacts along the new right-of-way are not anticipated. However, of the alternatives under consideration, this alternative would have the greatest potential for secondary development because of the improvements in passenger rail service and travel times/ridership. Alternative 125 would involve a new station building in Rochester, but bypasses the Amsterdam and Buffalo-Depew Stations, so no improvements are proposed at these stations (beyond track improvements), which would be rebuilt under Alternatives 90B/110. Alternative 125 would involve express service that would stop at Albany-Rensselaer, Syracuse, Rochester, and Buffalo Exchange Street stations, while also maintaining existing Empire Corridor service. With the added improvements in passenger rail service, this alternative would have the greatest potential to increase economic benefits to cities primarily at the station sites, although the track improvements proposed will benefit freight movements (thereby offering indirect economic benefits to the industries served) as well as passenger rail service. The highest potential for secondary development may occur at urban centers with station sites, given the availability of urban land to accommodate new development or redevelopment of existing developed sites. However, if the factors are in place to support new development at less urban station sites (availability of land, zoning, infrastructure, market forces, etc.), there is a greater potential for larger changes in land use should redevelopment occur at more remotely located stations.

The potential for any environmental impacts (traffic, land use, community, wetlands, parklands, air quality, noise, etc.) is limited to some extent by the heavily urbanized areas around many of the existing stations. The urbanized character around the stations served by Alternative 125 would limit the potential for impacts to undeveloped lands, farmlands, and natural resources, such as wetlands, endangered species habitats, and farmlands impacts. Any secondary development in these urban locations is likely to involve redevelopment of existing developed sites. Although secondary development or redevelopment and changes in land use may not occur under Alternative 90B, this alternative may produce the greatest indirect economic effects (increase in property values, increased business sales, increase in jobs) for the downtown areas served.

Appendix H Service Development Plan

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Index

Service Development Plan (2017)

SDP Errata

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Service Development Plan (2017)

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High Speed Rail Empire Corridor Program



2017 Service Development Plan with Errata



Department of
Transportation



FEDERAL RAILROAD ADMINISTRATION

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Appendix A – Corridor Investment Strategy

1.0 EXECUTIVE SUMMARY

Rail has long been important to New York's economy, and passenger trains have connected cities along the Empire Corridor since the early-1800s. The Empire Corridor from New York City to Buffalo and Niagara Falls is and has always been one of the most vital rail lines in the nation. The route between New York City and Albany-Rensselaer, offering 13 daily round-trips, is the third busiest intercity rail route in the nation. This passenger rail service is an important link among the cities and communities along the Corridor, providing transportation that uses energy effectively while delivering environmentally friendly public transportation between downtowns, and serving business and non-business travelers alike.

Given the Empire Corridor's importance, it is New York's vision to develop a modern intercity passenger rail operation that operates side-by-side with a modern, efficient freight rail network, without conflict and with broad economic benefits to passengers and shippers. On the Empire Corridor, upgraded passenger rail services can link the major cities across the state with high-quality, fast, frequent, and reliable transportation that can be competitive with automobiles, intercity bus services, and air travel. Improved Empire Corridor rail service can offer better mobility choices for passengers and an efficient system for moving goods and materials. An improved rail system will create jobs from the Port of New York to the Canadian Border as a vital part of our nation's freight rail network, while reducing our transportation carbon footprint and protecting the environment.

In the past 20 years, annual ridership on intercity passenger trains along the Empire Corridor has grown by over 500,000 passengers. Passenger trains along the Empire Corridor provide a convenient alternative to automobiles, reducing highway congestion. Recognizing the importance of intercity rail passenger service, New York has continually invested in new stations and vital infrastructure that has increased rail network capacity and provided passengers with modern facilities along the route. Carrying forward a vision for the future, New York has one of the largest state-supported programs for improving intercity rail passenger service in the nation, that has included installation of a second track between Albany-Rensselaer and Schenectady. New York has actively supported intercity rail passenger service on the Empire Corridor for over fifty years. It was one of the first states to add a state-supported train to the national network with restoration in 1974 of the train from New York City to Montreal, Quebec.

Rail service is an important component in New York's transportation network and the improvements outlined in the High Speed Rail Empire Corridor Program will initiate a new era of investments in the state's passenger railroad network. Enhancements to the intercity rail passenger network will complement the extensive commuter train system in the New York City metropolitan area that has become an integral part of lives of residents of 11 city and suburban counties served by the Metropolitan Transportation Authority (MTA). New York State-supported rail projects for both the Long Island Rail Road (LIRR) and Metro-North Railroad (MNR) have seen introduction of completely new fleets of electric multiple unit passenger equipment that was built in New York. This continual investment has created a reputation that New York commuter railroads are considered among the best and most reliable in the nation, with their focus on New York City at the heart of the Northeast Corridor. Now, investments as part of the High Speed Rail Empire Corridor Program will support rail as a modern, fast, and reliable part of the transportation network that spans the state from New York City to Niagara Falls.

As New York moves forward with its High Speed Rail Empire Corridor Program, with support from the Federal Railroad Administration (FRA), the state continues its commitment to supporting the

improvement of Empire Corridor intercity passenger rail service. This program lays the foundation for a greater level of investments and improvements than previously, continuing New York's 200-year legacy of supporting public transportation as far back as the Erie Canal and Mohawk and Hudson Railroad of the 1800s.

This Service Development Plan (SDP) outlines a series of short- and long-term investments to expand service and improve rail infrastructure across the state, building on a series of recent and ongoing projects sponsored over the past several years by the New York State Department of Transportation (NYSDOT). The plan is focused on delivering a set of program goals for New York State's High Speed Intercity Passenger Rail Program, that will move people and freight more efficiently along the Empire Corridor. This ensures that the corridor will continue to be a catalyst for business, jobs, and regional economic growth. Other critical components of the SDP focus on delivering world-class service that is safe for the communities served by the railroads, while preserving the environment and reducing carbon emissions. The SDP outlines how the New York rail system will meet the program's goals and demonstrates what can be achieved through a constructive partnership among federal, state, and local governments, private freight railroads, shippers, local business, and intercity rail passengers.

This SDP outlines in detail how the rail system is to be improved, how new services will be operated, funding needs, equipment requirements, and management systems to guide 25 years of continued investment. Chapters 2 and 3 provide background and explain the rationale for the program. Chapter 4 reviews alternatives considered during the National Environmental Policy Act (NEPA) process. Chapter 5 explains the development of the SDP and explores ridership trends. Chapter 6 discusses how the service will be operated, including equipment requirements, schedules, and travel benefits. Chapter 7 provides the phased sequence of capital projects that will be constructed over a 25-year period to accomplish the program, and the funding requirements. Chapter 8 explains funding and management of the work. Chapter 9 assesses the benefits expected to result from program implementation.

The program's benefits are extraordinary. Investment in intercity passenger rail and high speed rail is motivated by the desire to realize direct passenger benefits associated with faster, safer, and more reliable travel, and broad-based community benefits of improved environmental quality, reduced air and highway congestion, and economic development. Passenger rail improvements create economic impacts in the form of travel time savings for rail users, reduced congestion on other transportation modes, and regional productivity gains resulting from more efficient access to larger labor and trade markets. These savings cascade through the economy, creating jobs, increasing overall economic activity, and raising personal income.

The program requires the phased expenditure of \$7.323 billion over 25 years, to continually grow track and signal capacity and straighten sharp curves to support higher operating speeds.¹ The program would add 283 miles of new passing track and 39 miles of new fourth track and upgrade antiquated signal systems, greatly increasing operating flexibility for both freight and passenger trains. Stations are to be upgraded a modernized and station sidings expanded, adding platform flexibility and capacity so that trains no longer stack at stations while awaiting platform space.

For travelers, the 9 hour 6 minute New York City-Niagara Falls trip would be cut by 1 hour and 30 minutes, to 7 hours and 36 minutes. The greatest share of this travel time savings would occur between Albany and Niagara Falls, where current passenger/freight train conflicts are most

¹ The Tier 1 Environmental Impact Statement (EIS) evaluates a 20-year improvement program. The program is extended in this SDP to align work with past and expected future rates of spending of approximately \$240 - \$250 million annually.

frequent and severe. For this segment, travel times would improve by 75-80 minutes, from 5 hours 58 minutes to under 5 hours, a dramatic improvement. Schedule reliability – the percent of trains arriving on time at their final destination – would improve from fewer than 80% of trains reaching their terminus on time to more than 95% doing so. Four new round trip trains would be added over the 464-mile length of the Corridor, bringing scheduled service from 13 to 17 daily trains between NYC and Albany – and introducing hourly service during weekday morning and evening peak periods² over this busy segment. Two of these 17 trains will take advantage of the new track improvements and, by servicing selected stops, offer for the first time a 2-hour trip run time between New York City and Albany, providing a new standard for High Speed rail. The additional 4 daily trains will increase service between Albany and Niagara Falls from 4 daily trains to 8 trains, a doubling of train frequency among the major upstate cities. Together, these improvements and additional service will make intercity rail far more attractive as an alternative to driving and flying. The program is predicted to attract more than one million additional annual rail trips by 2040³, for a total of 2.7 million annual trips; this would be nearly a 68% increase over the 1.6 million annual trips recorded for 2016.⁴

In addition to these direct travel benefits, the program will address pressing safety, environmental and energy concerns. By speeding trains and shifting more than one million travelers to rail from other modes, the program will reduce locomotive fuel consumption by over 500,000 gallons of diesel fuel, eliminate or avoid 67 million pounds of air pollutant and greenhouse gas emissions, conserve nearly 400,000 billion British Thermal Units (BTUs) of energy as travelers switch to more energy-efficient rail services, and avoid 117 roadway accidents. Over its 25-year implementation period, the program investments will create 55,676 job-years of employment, and the direct hiring of 150 additional rail system workers. Yet these investments will add only \$68 million in annual cost to operate and maintain Empire Corridor passenger rail service, while generating \$62 million in annual ticket revenues, increasing the line's operating deficit by only \$6 million annually (all costs in 2017 dollars). These direct travel and indirect benefits are quantified in Exhibit ES-1.

New York's economy and its communities have enjoyed the power and efficiency of a robust rail system for more than a century. As population and employment continues to grow, and as upstate cities evolve beyond their industrial origins to increasingly thought-content economies (education, medicine, technology), the importance of the rail system only increases. The program discussed in this report offers a cost-effective and efficient set of improvements that leverage past investments to grow local and regional economies, increase travel choices, and broaden job opportunities for half the state's 20 million residents.⁵ Through this program, New York can remain among the nation's pre-eminent economic engines while continuing to attract top talent and offer its citizens a high quality of life by continuing its strong rail orientation and building on past success.

² The weekday peak period is normally considered to be a facility's (or a line's) highest volume 3-hour use period, typically 6:30 – 9:30 a.m. and 4:00 – 7:00 p.m. (although this can vary depending upon travelers' use habits for a particular facility or service). This concept does not apply to Saturday or Sunday travel.

³ These data refer to one-way trips, one traveler making a single trip from an origin to a destination. The number of round trips would be half these values.

⁴ Although the Tier 1 Final EIS forecast one million additional riders over 20 years in response to a 90-minute total travel time savings, this SDP recognizes a 25-year period and slightly greater travel time benefits (94 minutes), including four minutes of additional time savings from double-tracking the Schenectady-Albany single track segment that was not considered in the Tier 1 EIS. Applying travel and cost elasticities from the demand forecasting model to the additional four minutes of travel time benefit generates 83,000 more riders, for a total of 1.083 million one-way trips.

⁵ Based on 2010 Census and counted population 2011-2015;
<http://population2016.com/population-of-new-york-in-2016.html>.

Exhibit ES-1 Benefits of High Speed Rail Empire Corridor Program

Benefits (5-Year Periods)	Years 1-5	Years 6-10	Years 11-15	Years 16-20	Years 21-25
Travel Time Savings per Train Each Year, Summed over 5-Year Periods (minutes)	10	36	14	10	24
Cumulative Totals	10	46	60	70	94
Total Minutes of Delay Saved Each Year, Summed over 5-Year Periods (minutes)	35,272	10,120	7,328	14,657	18,490
Cumulative Totals	35,272	45,392	52,720	67,377	85,867
Ridership Increase Each Year, Summed over 5-Year Periods (one- way trips)	221,952	393,536	122,695	87,564	257,674
Cumulative Totals	221,952	615,488	738,183	825,747	1,083,421
Mode Shift Fare Cost Savings Each Year, Summed over 5-Year Periods (dollars)	6,965,434	3,833,964	1,492,886	1,064,115	2,244,224
Cumulative Totals	6,965,434	10,799,398	15,600,624	13,356,399	15,600,624
Passenger Train Energy Savings Each Year, Summed over 5-Year Periods (gallons of diesel fuel)	174,011	132,015	56,243	51,167	103,332
Cumulative Totals	174,011	306,026	362,269	413,435	516,767

Benefits (5-Year Periods)	Years 1-5	Years 6-10	Years 11-15	Years 16-20	Years 21-25
Passenger Train Emissions Savings Each Year, Summed over 5-Year Periods (metric tons)	1,753	1,330	567	515	1,041
Cumulative Totals	1,753	3,082	3,649	4,164	5,205
Mode Shift Energy Savings Each Year, Summed over 5-Year Periods (millions of BTUs)	80,148	142,108	44,306	31,620	93,047
Cumulative Totals	80,148	222,256	266,562	298,182	391,229
Mode Shift Emissions Savings Each Year, Summed over 5-Year Periods (metric tons of regulated pollutants + greenhouse gas (GHG))	6,823	12,096	3,771	2,691	7,920
Cumulative Totals	6,823	18,919	22,690	25,381	33,301
Mode Shift Safety Savings Each Year, Summed over 5-Year Periods (accidents)	29	45	14	10	19
Cumulative Totals	29	74	88	98	117
Job Creation Each Year, Summed over 5-Year Periods (job-years)	9,419	10,134	11,541	12,190	12,494
Cumulative Totals	9,419	19,552	31,093	43,283	55,777

Benefits (5-Year Periods)	Years 1-5	Years 6-10	Years 11-15	Years 16-20	Years 21-25
Direct Employment Each Year, Summed over 5-Year Periods (rail system jobs)	24	42	31	29	47
Cumulative Totals	24	66	97	126,118	173

Key

Travel Time Savings per Train Each Year, Summed over 5-Year Periods (minutes)	The total scheduled minutes saved due to increased train speeds in each year for each train to which the travel time benefit applies, totaled over each 5-year period. Thus, in Year 1 there is no change in travel time for any Empire Corridor trains (no projects are yet completed); in Year 2 every train will gain 2 minutes more than in Year 1 (since all trains traverse the Empire Corridor South segment); in Year 3 every train will travel 2 minutes faster than in year 2; in Year 4 every train will travel 2 minutes faster than in Year 3; and in Year 5 every train will travel 4 minutes faster than in Year 4. The total effect of the Years 1-5 improvements is that every Empire Corridor train in Year 5 will travel 10 minutes faster than they did in Year 1. In Years 6-25, improvements ultimately producing an 84-minute additional time savings will be confined to the Empire Corridor West segment, and only the eight trains traveling beyond Albany to Niagara Falls and back will receive the travel time benefits for each year of improvements; the other 13 NYC-Albany trains will not see any additional travel time improvements.
Total Minutes of Delay Saved Each Year, Summed over 5-Year Periods (minutes)	The product of the reduction of train operating minutes for each train due to improved on-time performance (NYC – Niagara Falls) and the number of trains to which the reduction applies in each year, totaled over each 5-year period. Thus, if the improvement in on-time performance in a particular year results in a 3-minute reduction of delay for four weekday trains, and a 1-minute reduction of delay for nine other weekday trains, the total delay reduction over the entire year would be 5,460 minutes. Over five years, the reductions in delay accomplished in each of the five years are added together to express the reduction in delay at the end of the five-year period compared to the delay at the beginning of the five-year period.
Ridership Increase Each Year, Summed over 5-Year Periods (one-way trips)	The total increase in one-way trips by passengers for all origin-destination pairs (among 17 stations, including Saratoga) in a given year, totaled over each 5-year period. For example, in Year 3, the 2-minute travel time savings achieved through program improvements will draw approximately 55,219 new passengers (each making a single trip) from auto/bus/air to rail. ⁶

⁶ The same travel time savings may produce slightly different ridership gains in different years because the savings occurs at different areas along the Empire Corridor, with benefits flowing to different origin/ destination pairs with different base ridership values.

Mode Shift Fare Cost Savings Each Year, Summed over 5-Year Periods (dollars)	Total fare costs saved by passengers switching to rail from other modes each year (auto mode uses \$0.17/mile + tolls; bus, air and rail use 2010 fares, inflated to 2017 on the basis of northeast Consumer Price Index; https://www.ssa.gov/OACT/STATS/cpiw.html), totaled over each 5-year period.
Passenger Train Energy Savings Each Year, Summed over 5-Year Periods (gallons of diesel fuel)	Gallons of diesel fuel saved due to the reduction in total minutes of delay for locomotives as a consequence of improved on-time performance, plus the reduction in total minutes of operation due to higher speeds, each year, totaled over each 5-year period. This metric is derived based on locomotives burning 70 gallons of diesel fuel per hour of operation (as an average value across all speeds, including stopped). Thus, if the program improvements in a particular year reduce delay by 6,000 minutes (100 hours), then the savings would be $100 \times 70 = 7,000$ gallons of diesel fuel saved. For Years 1-5, 35,272 minutes – or 588 hours – of delay are saved, and daily trains also receive annual travel time savings of (Year 1) 0 minutes, (Year 2) 2 minutes for all 26 trains, (Year 3) 2 minutes for 30 trains, (Year 4) 2 minutes for 32 trains, and (Year 5) 4 minutes for 34 trains, adding 113,880 – or 1,898 hours – of travel time improvement. The total time savings resulting from reduced delay and faster speeds is therefore 149,152 minutes, or 2,486 hours. This reduced time of operation yields a diesel fuel savings Years 1-5 of 2,486 hours \times 70 gallons/hour = 174,010 gallons.
Passenger Train Emissions Savings Each Year, Summed over 5-Year Periods (metric tons of regulated pollutants + GHG)	Metric tons of diesel-range pollutants + CO ₂ emissions avoided in each year (based on 22.2 ⁷ pounds of CO ₂ conserved for each gallon of diesel conserved), totaled over each 5-year period. Thus, for Years 1-5, given a savings of 174,010 gallons of diesel fuel, then $174,010 \times 22.2 = 3,863,037$ pounds of pollutants saved. As a metric ton is 2,204 pounds, this translates into 1,753 metric tons of pollutant emissions saved.

⁷ Emission factors for diesel fuel were provided at https://www.epa.gov/sites/production/files/2015-07/documents/emission-factors_2014.pdf

Mode Shift Energy Savings Each Year, Summed over 5-Year Periods (millions of BTUs)	<p>Millions of British Thermal Units (BTUs) of energy conserved in each year (totaled over each 5-year period): the net of total additional energy used or conserved from increased rail operations and maintenance (increased) and reduced on-road operations and maintenance due to mode shift of travelers to rail. The Tier 1 Final EIS notes an overall reduction in energy consumption by Empire Corridor travelers of 391,227 million BTUs saved in 2035 due to full program implementation and the diversion of 1,083,000 trips from auto/bus/air to rail. Allocating this total savings on the basis of ridership diverted each year in response to gradual improvements in reliability and speed, an equivalent portion of the overall energy savings is assigned. The value in the Tier 1 Final EIS is derived from industry standard energy profiles for auto, bus, air and rail travel, with increases in rail energy consumption (due to more trains to carry more passengers) offset by decreases in energy use by auto/bus/air as travelers divert to rail. Thus, if the total energy savings is due to the diversion of 1.083 million trips from auto/bus/air to rail in 2035, then the proportion of that diversion represented by each year's ridership gains (totaled over Years 1-5) applied to the total 391,227 million BTUs conserved yields the energy savings in that year due to mode shifts among Empire Corridor travelers. In Years 1-5, 221,952 trips – or 20.4% of the total 1.083 million trips diverted by Year 25 – are diverted from auto/bus/air to rail. Applying the 20.4% to the total 391,227 million BTUs saved over the entire 25-year program produces a result of 80,148 million BTUs saved.</p>
Mode Shift Emissions Savings (metric tons of regulated pollutants + greenhouse gas [GHG])	<p>Metric tons of emissions avoided for all regulated pollutants⁸ + CO₂ in that year (totaled over each 5-year period): the net of total additional emissions produced or avoided from increased rail operations and maintenance (increased) and reduced on-road operations and maintenance due to mode shift of travelers to rail (avoided). The Tier 1 Final EIS notes an overall reduction in energy consumption by Empire Corridor travelers of 33,188 metric tons of CO₂ saved in 2035 due to full program implementation and the diversion of 1,083,000 trips from auto/bus/air to rail. Allocating this total savings on the basis of ridership diverted each year in response to gradual improvements in reliability and speed, an equivalent portion of the overall energy savings is assigned. The value in the Tier 1 Final EIS is derived from industry standard energy profiles for auto, bus, air and rail travel, with increases in rail energy consumption (due to more trains to carry more passengers) offset by decreases in energy use by auto/bus/air as travelers divert to rail. Thus, if the total energy savings is due to the diversion of 1.083 million trips from auto/bus/air to rail in 2035, then the proportion of that diversion represented by each year's ridership gains (totaled over Years 1-5) applied to the total 33,188 metric tons of CO₂ conserved yields the emissions reduction in that year due to mode shifts among Empire Corridor travelers. In Years 1-5, 221,952 trips – or 20.4% of the total 1.083 million trips diverted by Year 25 – are diverted from auto/bus/air to rail. Applying the 20.4% to the total 33,188 metric tons of CO₂ saved over the entire 25-year program produces a result of 6,799 metric tons of CO₂ saved. Adding the small amount of criteria pollutant emissions avoided (dwarfed by the amount of CO₂ generated burning diesel fuel) produces the result in the table of 6,823 metric tons of emissions saved.</p>

⁸ Regulated Pollutants include CO, HC, NO_x, SO_x, PM_{2.5}, PM₁₀, Ozone, Lead (Pb). Reductions in regulated pollutants are dwarfed by reductions in CO₂ due to cleaner engines and the conversion of 99% of diesel fuel to CO₂ during combustion.

Mode Shift Safety Savings (accidents)	<p>Total accidents avoided due to mode shift from auto/bus/air to rail in each year, totaled over each 5-year period. This metric is derived using data provided by the National Transportation Safety Board and other official sources for accidents per million passenger-miles of travel by air, bus, auto and rail. The accident rates used are:⁹</p> <p>Auto 1.602941802 accidents/million passenger miles Bus 0.203433744 accidents/million passenger miles Air 0.000046892 accidents/million passenger miles Rail 0.011235955 accidents/million passenger miles</p> <p>Employing these drivers, for each 100 passengers diverted to rail, and applying the diversion percentages derived from the travel demand forecasting model of 50/30/20 for bus/air/auto, and the average trip lengths among origin-destination pairs embedded in the 2010 trip table that is the basis for all travel demand forecasting associated with this program, the reduction in accidents is derived as $(50 \times 0.203433744 \times \text{the average trip distance}) + (30 \times 0.000046892 \times \text{the average trip distance}) + (20 \times 1.602941802 \times \text{the average trip distance}) - (100 \times 0.011235955 \times \text{the average trip distance}) = \text{the net accidents avoided for each 100 travelers diverted to rail.}$</p>
Job Creation Each Year, Summed over 5-Year Periods (job- years)	<p>Total job-years created across all economic sectors due to construction activity, increased rail operations (direct employment), and increased related economic activity (indirect employment) in each year, totaled over each 5-year period. Although the metric provides a final number in the 25th year, the additional job-years created by the 25th year of the program due to increased rail operations is perpetual, resulting in 2,702 additional permanent employees on the railroad system. A Transportation Economic Development Impact System (TREDIS) model was used to develop total economic activity flowing from rail improvement investments, across all economic sectors. A total of 55,777 total job years¹⁰ were predicted to result from the construction over the 25-year program term.¹¹ These were allocated proportionally by year on the basis of annual program investments accumulated in five-year segments.</p>

⁹ Multiple sources.

¹⁰ An analysis by HNTB resulted in an estimate of 2,129 job-years/year for the program at a \$6 billion funding level. Escalating this to \$7.323 billion and adding the job-years created due to the ripple effect of permanent railroad jobs added as infrastructure maintenance and operational needs expand, and then subtracting the direct rail jobs created to staff this infrastructure maintenance and operations produces the 55,777 job-years value attributed to the program.

¹¹ On a national standard, each \$1 billion of investment typically generates 7,700-8,100 job-years. Applying that metric range produces a range of potential economic impacts for the \$7.323 billion program of 56,378 – 59,316 job years created.

Direct Employment Each Year, Summed over 5-Year Periods (rail system jobs)	Additional rail jobs required to operate and maintain new infrastructure and additional trains, as needed in each year as improvements are built or new train service is added, totaled over each 5-year period. These were derived using industry-standard metrics of workers per unit of rail infrastructure (miles of track or number of switches, square footage of stations, per train crew requirements). For train crews, a distinction is made if trains are weekday only (two crews) or seven days a week (three crews). Train crew values also recognize contractual requirements for layover, hours of service limitations, and other factors that affect staffing requirements. Infrastructure maintenance staffing is a direct function of unit values, as maintenance staff are typically assigned to and pick jobs on a single-shift basis.
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2.0 INTRODUCTION

The Federal Railroad Administration (FRA) and the New York State Department of Transportation (NYSDOT) are completing a Tier 1 Environmental Impact Statement (EIS) that evaluates options for improving intercity passenger rail services along the 464-mile Empire Corridor between Pennsylvania (Penn) Station in New York City and Niagara Falls Station in Niagara Falls, New York. In 2010, NYSDOT received a grant from the FRA with which to develop alternatives for improving the Empire Corridor rail system, to conduct the evaluation of these alternatives pursuant to the National Environmental Policy Act (NEPA), and to prepare this Service Development Plan (SDP) for the selected alternative to describe its feasibility, costs, sources of funding, and operation.

The SDP serves as the business, institutional and organizational plan guiding implementation of the High Speed Rail Empire Corridor Program. The SDP lays out the approach for implementing proposed capital projects and higher-speed rail services that will meet the program goals outlined in the Tier 1 Final EIS. The implementation plan for the SDP requires the generation of a prioritized capital program, a ten-year financial plan, institutional and stakeholder arrangements and agreements, and a program management plan. The institutional arrangements will address asset owners, program sponsors, and railroad and stakeholder agreements defining roles and responsibilities for implementation of the proposed program and new and expanded service. The SDP is required for the program to be eligible to receive FRA funding. A completed SDP demonstrates to the FRA that the program has been defined in sufficient detail – and proven physically, financially, and operationally feasible – to be ready to progress to the implementation phase.

High quality transportation links between New York’s northern metropolitan areas and New York City have been key to its economic success for over 200 years. Past investments in the Erie Canal, railroads, the New York State Thruway (Thruway), and airports have played major roles in the growth and prosperity of the state. In each case, New York was a leader in recognizing the role of transportation in growing and sustaining the state’s economy.

New York has been planning to improve its intercity rail service along the Empire Corridor from New York City to Niagara Falls for more than 30 years. In the past 20 years, annual ridership on intercity passenger trains traveling on the Empire Corridor has grown by over 500,000 passengers, to 1.6 million in 2016. Recognizing this growth and the importance of the rail system to sustain it, the state has invested with increasing focus on the provision of high quality, fast, and efficient intercity passenger rail services – and the equipment, facilities, new development, jobs, and community revitalization that are a direct result – are statewide benefits. Further enhancements to the New York City-Niagara Falls rail network will complement the New York City metropolitan area’s already extensive commuter rail system, considered the best and most reliable in the nation. This rail network helps people in 11 counties live and work with less dependence on automobiles and more time for business and families, lower levels of traffic congestion, less air pollution, in denser and more walkable towns and cities oriented around train stations rather than highway interchanges.

With support from New York State, both the LIRR and Metro-North Railroad (MNR) have seen the introduction of new fleets of electric multiple unit passenger equipment that was itself built in New York. Future investments under the High Speed Rail Empire Corridor Program will build on these successes by creating a rail network spanning the state’s major cities from New York City to Niagara Falls. With Buffalo’s emerging resurgence as a post-industrial educational and

research center to Albany's development of a world-class nano-tech hub to Rochester's recalibration of its economy from film to optics, the key transportation linkages provided by the Empire Corridor are the backbone of the state's continued economic development among its major cities.

The benefits of increased state investment are obvious. New York has consistently invested in the MTA's commuter rail systems, providing critical support for New York City's continued growth and development as a world financial, science, educational, arts and business center. The result of years of investment in New York City metropolitan area mass transit is the largest, most reliable, and most intensively used commuter and subway network in the nation.

New York's intercity rail system needs a similar set of investments. The Northeast Corridor from Washington D.C. to Boston serves a critical megalopolis housing 15% of the nation's population and accounting for 20% of the nation's Gross Domestic Product. The Empire Corridor branch of this network plays the crucial role of joining New York's major cities of Buffalo, Rochester, Syracuse, and Albany to this economic hub, and must receive the focus appropriate to so important a resource. It is the Empire Corridor that enabled these cities to grow and prosper through the 20th Century, and that must continue to support their local economies through higher-speed service that broadens their economic bases, extends their reach, expands job markets, and facilitates business connectivity in a key economic corridor. Recent investments for improvements at Rochester, Albany, Niagara Falls, and Schenectady are already freeing passenger rail service from freight rail conflicts that have resulted in years of unreliable and slow service. Building on these initial investments, the state must add tracks and switches, upgrade signals, improve and modernize stations, expand platform space to add critical train capacity, smooth curves for higher speed, and remove one-track bottlenecks that delay passenger trains behind slower-moving freight trains. Only through a focused and comprehensive program of such rail improvements will New York be able to support the continued growth of upstate economies and, by extension, the economic fortunes of the state as a whole.

This SDP outlines such a program. After five years of careful analysis, NYSDOT has identified a suite of improvements that can be built with available and anticipated funding without interfering with existing passenger and freight services. It will confer gradual and continuing benefits to both passenger and freight services sharing the busy Empire Corridor section between Albany and Niagara. In so doing, it will bolster center-city renaissance while supporting key business and educational institutions and improve linkages between upstate towns and the capital and New York City.

The program will have broad benefits, improving freight and goods movement, train travel, the local and regional economy, town centers and surrounding communities, and the environment.

Moving More People and Goods

New York City metropolitan area transportation facilities are at capacity for large periods of every workday. The transport of people and goods by rail is one of the few remaining viable options for continuing to grow the City's and the State's economies. Rail freight volumes on CSXT and Canadian Pacific (CP) Rail will continue to grow, and only through carefully designed improvements in the existing right-of-way over which Empire Corridor trains and CSXT/CP Rail freight trains share tracks can these critical economic trends be sustained. The need to upgrade the track and signal infrastructure is immediate and pressing and must be addressed for New York to remain economically competitive.

The improvements outlined in this report will accelerate the movement of people and goods by rail, increasing reliability and decreasing trip times between major destinations for business travelers, students, and recreational travelers alike. In response, ridership is anticipated to grow significantly, from the 1.6 million current Empire Corridor passengers to 2.7 million after implementation of the full program.¹²

Travel time is expected to be reduced by 75-80 minutes between Albany and Niagara Falls, and between 10-15 minutes between Albany and New York City. Two of the 17 daily trains between New York City and Albany will bypass some stops in order to achieve a 2-hour travel time, a breakthrough that is expected to induce even more demand for passenger rail services on this already heavily traveled leg. Thousands of students and educators at colleges and universities in Albany, Syracuse, Rochester, and Buffalo will enjoy quicker and more reliable connections to research centers in New York City, broadening the reach of tech centers and analytical research and fostering continued evolution of upstate cities as major educational hubs. And more freight will be able to be moved on a “just in time” basis rather than “as scheduled,” reducing costs, simplifying supply chain logistics, and providing a competitive edge for New York businesses and manufacturing centers.

Catalyzing Economic Growth

New York’s origins as an industrial manufacturing center remain important today; the state was once the center of rail transportation technology and innovation. The remaining industries that are still tied to the rail network are a mix of advanced and traditional technology involving both blue- and white-collar labor forces. To provide the capital improvements, equipment and services proposed for the Empire Corridor in this report, 173 permanent jobs would be created to operate the rail system, and some 55,777 job-years of additional employment created in constructing and operating it over a 25-year implementation period.¹³ This economic infusion will be multiplied as dollars invested in the rail system play through upstate economies, fostering greater economic activity broadly beneficial to the entire Empire Corridor.

Revitalizing Communities

In addition to speeding main-line passenger and freight rail services, the program fosters improved intermodal connections in upstate cities. This intermodal access to local economic activity centers is central to local community revitalization, as it provides non-auto-based mobility solutions that free cities from auto dominance, opens downtowns to walkable environments, and propels greater community interaction centered around rail stations and their feeder bus and light-rail systems. As such, speeding of the Empire Corridor intercity passenger and freight services helps bolster in-city economic initiatives while linking upstate cities together and to the economic engine that is New York City.

Preserving the Environment

Investments in rail strengthen the environment, even as they help solidify communities and in-city economies. Rail is the most space and energy efficient means of moving people and goods, enjoys standard technologies long proven in service, and reduces air pollution and noise generated through other means of travel. Overall, investments in rail continue to repay significant

¹² Although the Tier 1 Final EIS forecast 1 million additional riders over 20 years, this SDP recognizes a 25-year growth period, and slightly greater travel time benefits (94 minutes rather than 90 minutes as per the EIS), resulting in slightly more ridership (1.1 million).

¹³ The long-term impact of 173 permanent rail system jobs continues past the 25-year analysis horizon. Construction jobs – and their multiplier effect on local economies – dissipate after completion of the program.

environmental and economic dividends measured in decades, propelling economic growth while preserving communities and the region from the environmental degradation that results from dependence on automobiles.

The High Speed Rail Empire Corridor Program outlined in this report does all of these things. It eliminates bottlenecks and chokepoints on one of the nation's most heavily used freight and passenger rail lines. In so doing, it will improve reliability from the current condition, where more than 20% of trains arrive late, to a dependable and consistently reliable service where more than 95% of trains can be expected to arrive on time. By renewing and modernizing stations and station track switch and signal systems, it increases platform capacity, allowing more trains to operate and to grow with increasing ridership. And it provides all these benefits while accommodating continued growth in the essential rail freight market on this central freight spine between Albany, Chicago and Toronto, and points west.

With completion of the environmental analysis of the corridor in the Tier 1 Final EIS, and with selection of the best alternative for accomplishing these critical mobility objectives, New York is poised to engage the program and to work with its transportation partners to make this vision a reality. The technology has been identified. And the need for action is fully evident. New York will now engage funding opportunities and work with the owners and operators of these freight and passenger services to begin delivering on a plan for fast, efficient, reliable, and attractive intercity rail services to benefit New York residents and businesses, in keeping with its laudatory history of continued rail-oriented economic development.

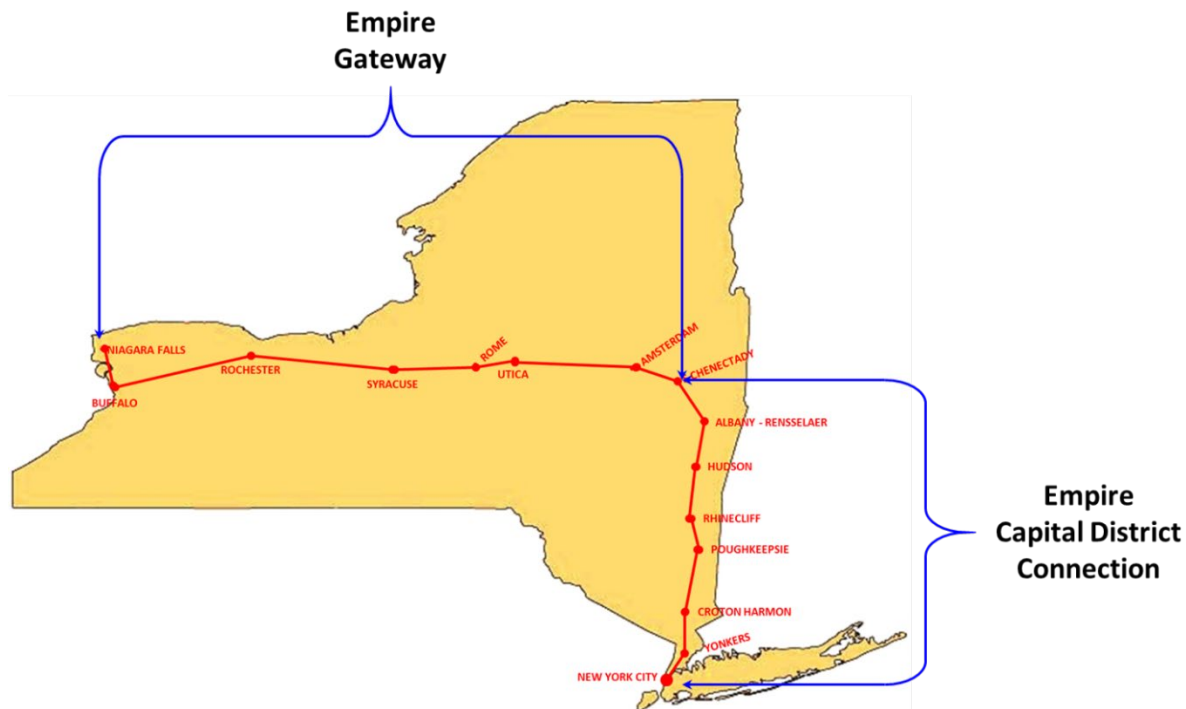
2.1 What is the Empire Corridor?

The 464-mile Empire Corridor is a rail network that links all of the State's major cities, extending from New York City's Pennsylvania Station north through Yonkers and Poughkeepsie to Albany, and turning west to travel through Schenectady, Rome, Utica, Syracuse, Rochester, and Buffalo to terminate at Niagara Falls. The Corridor consists of three main geographic segments which were defined in the Tier 1 Final EIS:

- **Empire Corridor South (ES)**, extending 142 miles north from Penn Station to just north of Albany-Rensselaer Station;
- **Empire Corridor West (EW)**, extending 294 miles west from approximately one mile north of the Albany-Rensselaer Station to just east of the Buffalo-Exchange Street Station; and
- **Niagara Branch (NF)**, extending 28 miles west from a point located just east of Buffalo-Exchange Street Station to Niagara Falls.

These project segments have been defined to support infrastructure project construction packaging and phasing, and to more precisely address stakeholder railroad ownership and operation. NYSDOT has recently redefined the Corridor as comprising two major segments: the **Empire Capital District Connection**, from New York City to Albany and Schenectady, and the **Empire Gateway**, extending west from Schenectady to Niagara Falls. These designations capture recent system improvements as they relate to travelers' daily experience. Exhibit 2-1 shows these designations.

Exhibit 2-1 Empire Gateway and Empire Capital District Connection Segments



In subsequent sections of this SDP, both naming conventions are used. For purposes of analysis of the rail system operation, the Corridor is subdivided into smaller segments, to aid understanding of service and infrastructure improvements as they involve different asset owner(s) and operator(s), and as they relate to future packaging of infrastructure upgrades. These sub-segments are as follows (Exhibit 2-2):

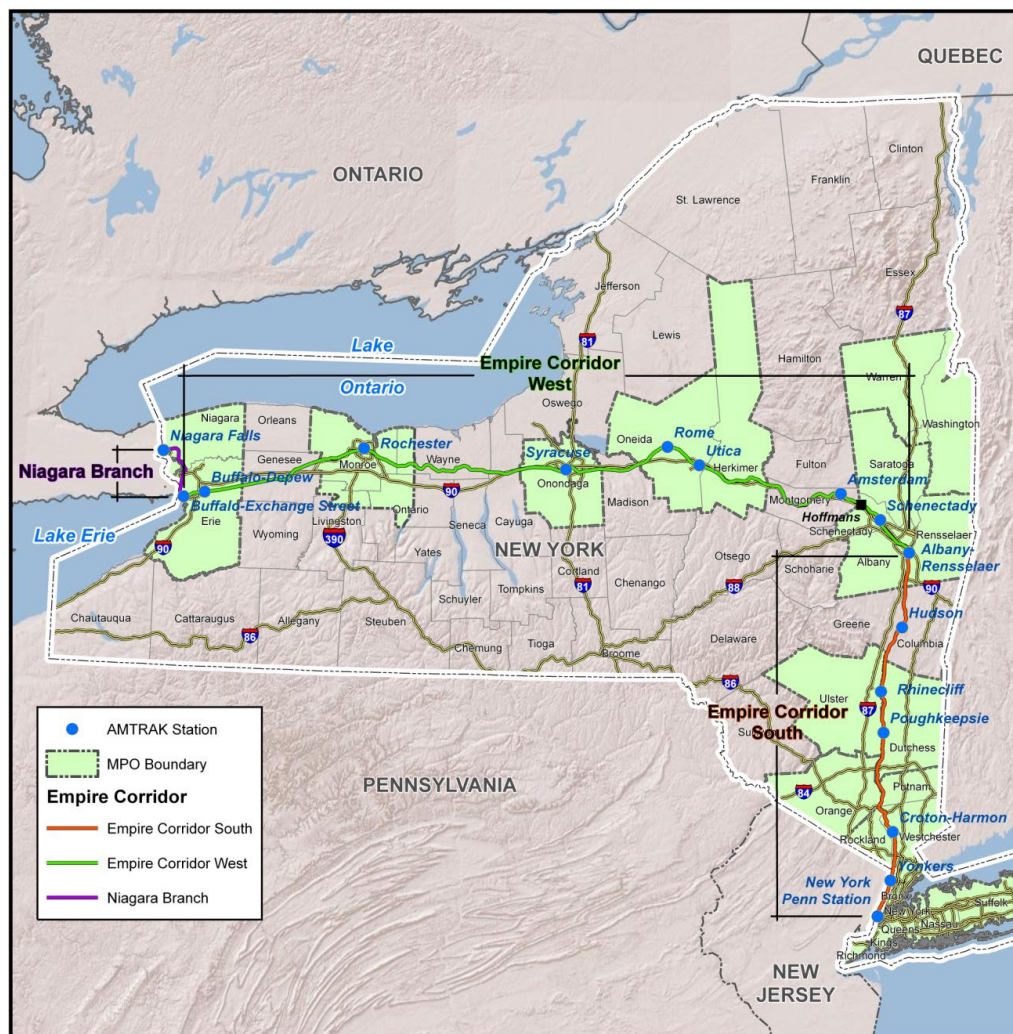
Exhibit 2-2 Empire Corridor Sub-Segments

Operating Segment	Primary Segment	Limits
West Side Connection	Empire Corridor South	New York City to Spuyten Duyvil Milepost 0 - 12
Lower & Mid-Hudson Valley	Empire Corridor South	Spuyten Duyvil to Poughkeepsie (CP75) Milepost 12 – 75
Upper Hudson Valley	Spans Empire Corridor South and Empire Corridor West	Poughkeepsie (CP75) to Hoffman's Milepost 75 – 169
Empire Corridor – West	Empire Corridor West	Hoffman's to Niagara Falls Milepost 169 – 464

2.2 Related Improvements

In recent years, NYSDOT has invested heavily in improved service and infrastructure upgrades for the Empire Corridor (Exhibit 2-3). As part of the original “Base” condition for the corridor¹⁴, NYSDOT identified a series of infrastructure enhancements that would relieve or eliminate significant bottlenecks and choke points along the Corridor, with estimated costs of approximately \$500 million (2015 dollars). To date, NYSDOT has already accomplished many of these projects, setting the stage for implementation of the Preferred Alternative that is the subject of this SDP.

Exhibit 2-3 Project Location Map



Among the improvements NYSDOT has completed are the following (project designations key to NYSDOT project lists)

- Hudson Line Signal Reliability; ES-3

¹⁴ See *Empire Corridor Tier 1 Final Environmental Impact Statement* for a complete description of the alternatives considered to improve service in the Empire Corridor.

- Hudson Line Highway-Rail Grade Crossing Safety Improvements; ES-1
- Albany-Rensselaer Station Fourth Track Capacity Improvements; ES-9
- Niagara Falls International Railway Station and Intermodal Transportation Center – New Intermodal Transportation Center; EW-13

In addition, projects funded and in construction include:

- Albany – Schenectady Double Track; ES-10
- Schenectady Station Renovation / Platform Improvements; EW-01
- Syracuse Track Configuration and Signal Improvements; EW-6, and
- Rochester Station Re-development / Operating Improvements; EW-19.

Together, these projects have and will continue to increase train speeds in the most heavily traveled sections of the Empire Corridor, increase capacity to enable more trains to operate without conflicts, and substantially improve schedule reliability. As such, NYSDOT's efforts since 2015 set the stage for the next wave of improvements needed to further upgrade passengers' experience and increase ridership. Some of NYSDOT's more prominent accomplishments to date are below.

Albany-Rensselaer Station and Track Improvements

Service on the Empire Corridor is anchored at Albany-Rensselaer Station. Track projects recently completed at this station included lengthening the platform to accommodate longer trains and the installation of a fourth station track. Signal and track improvements at Albany-Rensselaer now allow for the station to accommodate four passenger trains at platforms while also handling other yard movements and locomotive changes. Exhibit 2-4 shows the new Albany-Rensselaer Station with the recently completed improvements to the Interlocking CP 142 and installation of the fourth station track. This improvement increases platform and switch capacity, permitting more trains to operate through the station than previously.

Exhibit 2-4 Interlocking CP 142 and New Fourth Station Track at Albany-Rensselaer, New York



At Niagara Falls, a new state-of-the-art station has streamlined station operations and accommodation of passengers crossing the international border from Canada, including new facilities for the Department of Homeland Security used for screening of passengers. Exhibit 2-5 shows the new station. The station's new Custom and Immigration facilities allows passengers entering the United States from Canada to pass through customs more reliably.

Exhibit 2-5 New Niagara Falls Station



A new Rochester Station was recently completed. It will allow two passenger trains to serve the station on a new high-level platform, which will reduce conflicts and increase capacity of the CSXT's Rochester Subdivision. Another station project underway at Schenectady will provide a new station replacing a facility nearing the end of investment life. This new station at Schenectady will complement other improvements in the city with the opening of new tourist and art attractions in the area near the station location.

Also at Syracuse, interlocking and signal projects now under development will help improve operations for both passenger and freight trains. The Rochester station is shown in Exhibit 2-6.

Exhibit 2-6 New, recently completed station at Rochester



3.0 PROGRAM PURPOSE AND NEED

The purpose of the High Speed Rail Empire Corridor Program is to introduce higher passenger train speeds on the Empire Corridor and improve reliability, travel times, service frequency, and passenger amenities. The High Speed Rail Empire Corridor Program will improve passenger rail service along the corridor and, in so doing, attract additional passengers, increase travel choices, and contribute to a balanced, multi-modal transportation system.

Improved service along the Empire Corridor will better connect the principal population centers of western New York State with Albany and New York City, further enhancing connections to Northeast Corridor passenger rail service (Philadelphia and Washington) and other markets (Midwest and New England) and facilitating international travel to Canada. Its location within one of the most populated regions in the country, as well as its importance to national and international freight traffic, underscores the importance of the Empire Corridor to regional development. Providing time-sensitive and efficient service will, in turn, promote economic vitality, improve quality of life for residents, and reduce automotive travel and emissions.

3.1 Program Needs

The High Speed Rail Empire Corridor Program was undertaken to address two primary transportation and mobility needs:

- Reduce Infrastructure Constraints – eliminate chokepoints and bottlenecks where insufficient track, signal or station platform capacity impedes the ability of trains to progress along the right-of-way or causes conflicts between freight and passenger services sharing the same track(s); and
- Accommodate Existing and Projected Future Travel Demand - ensure the provision of attractive, cost-competitive, and modern passenger rail services to enable those wishing to travel by rail to do so, and to draw travelers from other, less efficient modes in response to speed and reliability improvements.

To address these two fundamental Corridor needs, the following program objectives were defined:

- Improve On-Time Performance (OTP), a key measure of schedule reliability;
- Reduced travel time;
- Increase service frequency;
- Increase ridership;
- Reduced dependency on automobiles in the corridor; and
- Minimize interference with freight rail operations.

By designing a program of projects and service improvements to accomplish these program objectives, NYSDOT intends to deliver cost effective, modern, efficient, reliable, and speedy passenger rail service over the entire Empire Corridor, leveraging anticipated population and economic growth to increase ridership, reduce local road congestion, support and focus downtown development, draw local investment to city centers, and thus strengthen New York's and the nation's economies.

3.2 Description of Transportation Network in the Corridor

Travelers along the Empire Corridor enjoy a robust transportation network, with train, bus, airplane, and automobile alternatives to access the Corridor's major destinations. These are described in the following sections.

3.2.1 Auto Network

During 2015, there were over 55 million automobile trips on the New York State Thruway between Exit 26 (Schenectady - Scotia - I-890 - NY Routes 5 and 5S) and Exit 50 at Buffalo/Niagara Falls - I-290. Travelers destined for the western cities of Syracuse, Rochester and Buffalo from New Jersey may also travel via I-80 west to I-81 as an alternative routing.

3.2.2 Bus Network

Along the Empire Corridor motor coach operations provide services between New York City, Albany, Utica, Rome, Syracuse, Rochester, Buffalo and Niagara Falls. These buses are generally less expensive than Amtrak services and are somewhat faster barring significant traffic on the major highways on which they rely. They are considered less comfortable than rail or air travel and are generally not preferred by travelers except for reasons of economy or for trips to destinations other than the central business district. Buses from New York City originate at the Port Authority Bus Terminal in midtown Manhattan, and typically confront high levels of traffic congestion entering and exiting the facility, and congestion and delay on the Hudson River crossings. Buses from Newark use the New Jersey Turnpike or I-80 depending upon their destination.

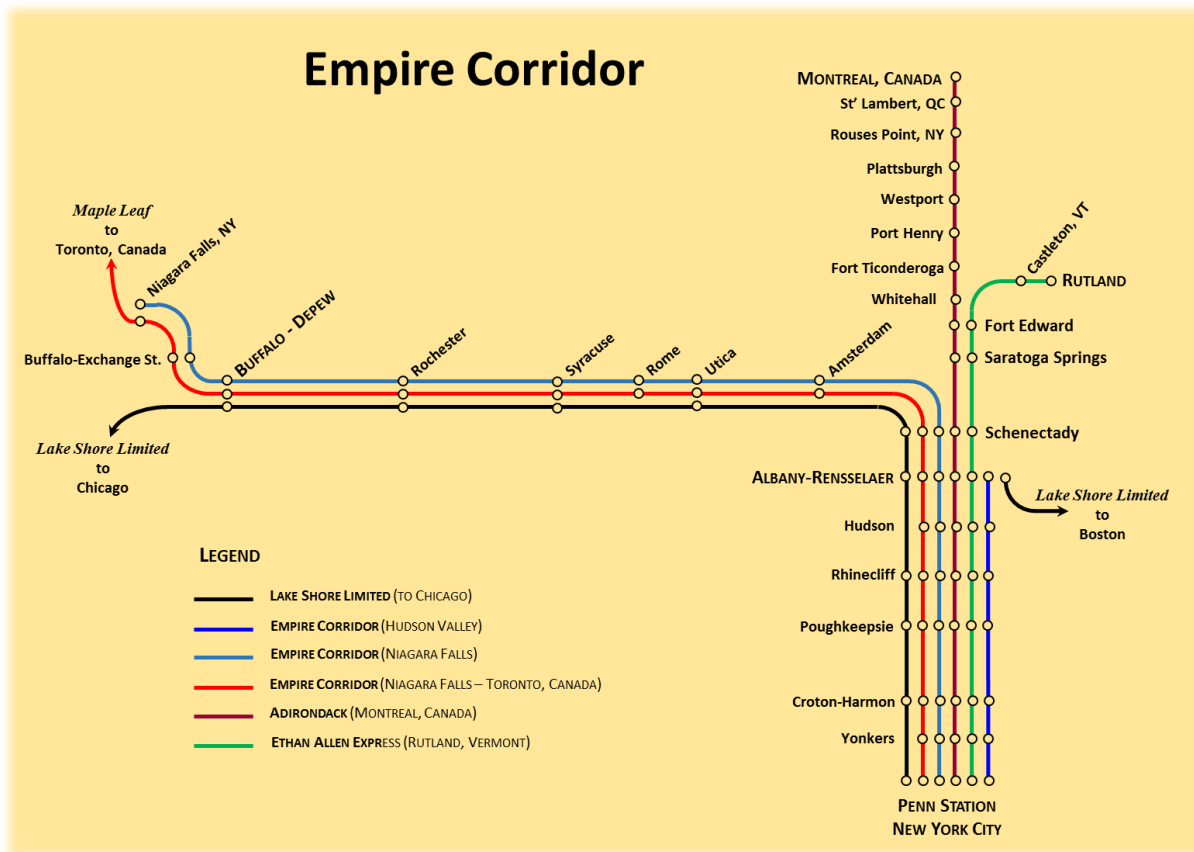
3.2.3 Air Network

Air service to Empire Corridor cities is available from New York City to Albany, Syracuse, Rochester, and Buffalo. Fares are significantly higher than those for either rail or bus, and airports require additional travel from central business districts by auto, bus, or ride-sharing services (taxi and Uber or Lyft-type services). There is currently no air service among the cities of Albany, Syracuse, Rochester, and Buffalo, as the trip distances are too short to justify air service, and flights cannot compete economically with available bus, rail, ride-sharing, auto and auto rental options.

3.2.4 Rail Network

NYSDOT contracts the operation of the Empire Corridor passenger rail service (Amtrak is the current operator). The route between New York City and Albany-Rensselaer, offering 13 daily round-trips, is the third busiest intercity rail route in the nation. The segment between Albany and Niagara Falls is owned by CSXT, a freight rail company, which allows Amtrak to run passenger service on shared tracks by contract with NYSDOT. The Empire Corridor is one of the primary freight routes between Boston and New York City, featuring favorable grades for train movements across the Appalachian Mountains to Buffalo, the Great Lakes, and to points in the Midwest and Chicago. Passenger trains serve the towns of Yonkers, Croton-Harmon, Poughkeepsie, Rhinecliff, and Hudson between New York City and Albany, and Amsterdam, Utica, Rome, Syracuse, Rochester, Buffalo, and Niagara Falls west of Albany. The rail network serving the Corridor is shown in Exhibit 3-1.

Exhibit 3-1 Intercity Rail Service Diagram for New York State

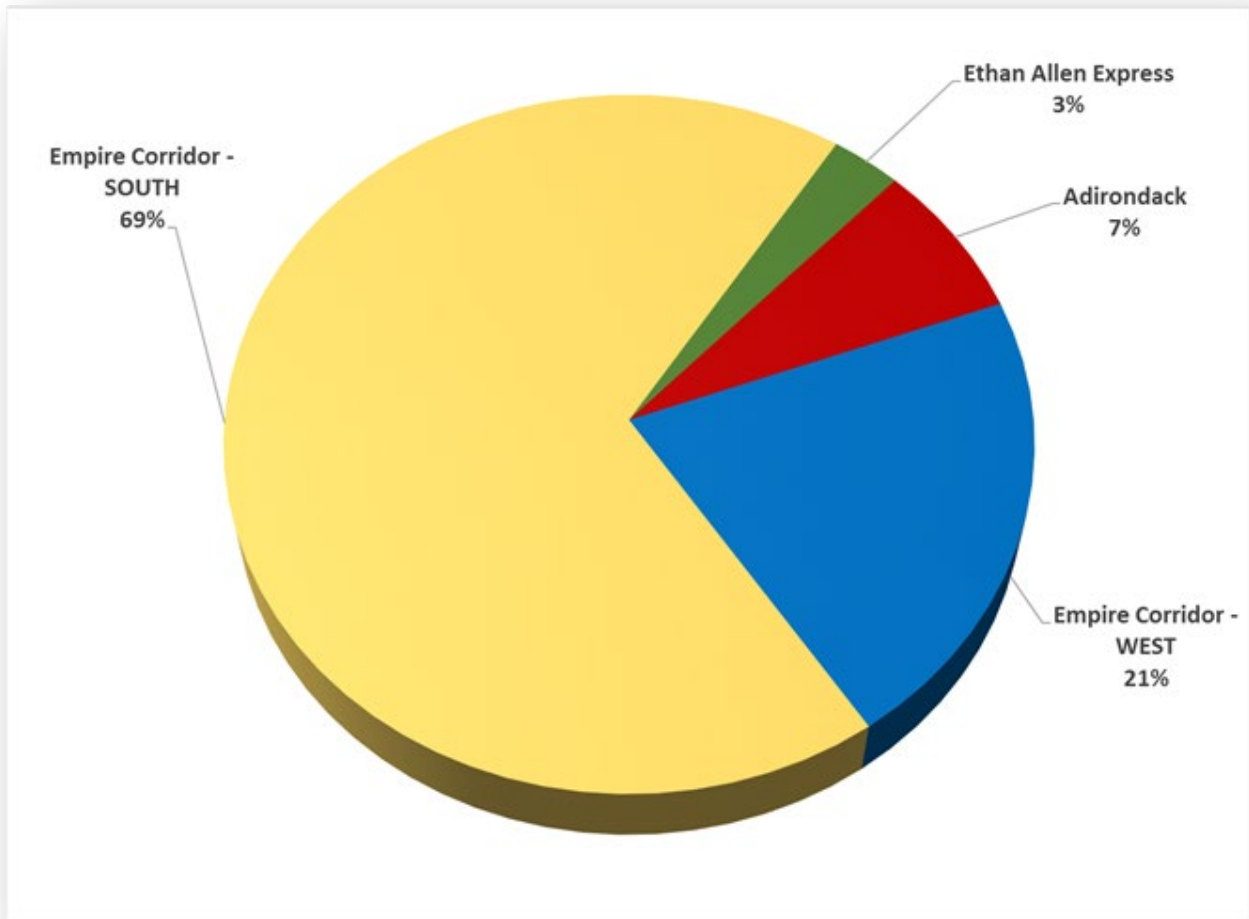


In addition to its primary New York City – Niagara Falls service, the Empire Corridor train system supports trains that travel beyond these boundaries. The Ethan Allen train runs northeast beyond Albany to Rutland, VT. Trains #63 and #64 (the “Maple Leaf”) are operated by VIA RAIL Canada from Niagara Falls, New York to Toronto, with U.S. and Canadian rail crews switching places at the border. Trains #68 and #69 (the “Adirondack”) are continuations of two Empire South trains that run north beyond Albany to Montreal, Canada, with the U.S. crews operating the trains over the entire route. The Lake Shore Limited runs west past Buffalo to Cleveland and Chicago, and east past Albany to Boston, Massachusetts. These services were included as part of the network simulation for the program, to ensure that the proposed train improvements are feasible, that the program can be delivered as intended, and that it will meet program objectives. These trains have also been recognized in discussions of ridership in the Tier 1 EIS and this SDP.

3.2.5 Rail Ridership Trends

The geographic distribution of ridership on the Empire Corridor is shown in Exhibit 3-2. The majority of the route's ridership is concentrated between NYC and Albany.

Exhibit 3-2 Empire Corridor Ridership by Segment



The route between Albany-Rensselaer and New York City is the third busiest rail route in the nation and is used by Empire Corridor trains as well as trains serving Montreal and Vermont. Ridership on the Empire Corridor has been growing steadily for the past decade, reaching 1.6 million passengers in 2016. As NYSDOT improves Empire Corridor infrastructure and services, Corridor ridership will continue to grow in response to faster trips and improved reliability.

4.0 ENVIRONMENTAL REVIEW PROCESS

To comply with the National Environmental Policy Act (NEPA), beginning in 2009, NYSDOT and FRA conducted a NEPA Scoping process and then developed a project Purpose and Need Statement and a series of higher-speed Empire Corridor rail alternatives that could provide improved Empire Corridor service, all documented in a Tier 1 Draft Environmental Impact Statement (Draft EIS circulated in 2014). The owners and operators of current freight and passenger rail services participated in the development of these alternatives in terms of operational feasibility and constructability. Subsequently, the impacts of these alternatives on local communities and the natural environment were assessed and compared, along with capital and annual operating and maintenance costs for each. Members of the general public, federal, state, and local agencies, and identified stakeholders (e.g., political jurisdictions, special purpose organizations, corridor owners and operators) were fully engaged in the development, assessment and comparison among these alternatives as members of the Empire (Corridor) Project Advisory Committee (EPAC). Four EPAC meetings were held during the Tier 1 Draft EIS process.

Formal public hearings were held in six cities across the state to explain the program and gather public input. Following the public hearings, a *Response to Comments* document was prepared. Finally, based on public comments received and the analytical findings, a **Preferred Alternative** (PA) was selected by NYSDOT. This PA is proposed in a Tier 1 Final Environmental Impact Statement (Final EIS) that is being published in parallel with this SDP.

The alternatives developed through the NEPA process were:

- **Base Alternative:** The slowest of the alternatives, the Base Alternative would constitute the current system improved through a series of basic upgrades that would be completed whether the Empire Corridor program advances or not. (Many of these have been completed at this writing; see Chapter 2 of this report.)
- **Alternative 90A:** This would involve a slight improvement over the Base Alternative, permitting some sections of the route to feature 90 miles per hour (mph) operation.
- **Alternative 90B:** This would involve a more significant improvement over the Base Alternative, permitting maximum speeds of 90 mph over a significant portion of the 464-mile route.
- **Alternative 110:** This would involve a modest improvement over the 90-mph Alternatives and permit some portions of the route to operate at 110 mph.
- **Alternative 125:** This alternative would involve an entirely new alignment designed for consistent 125 mph speeds.

Each of the alternatives were defined in terms of specific infrastructure and service improvements that would be made along the 464-mile Empire Corridor to achieve the higher speeds. These are described in the following section.

4.1 Base Alternative

The **Base Alternative** would maintain the current operating plan featuring thirteen round-trips between New York City and Albany-Rensselaer, with four trains continuing to Buffalo and three to Niagara Falls, in each direction. The **Base Alternative** comprises a series of supporting projects to improve the current level of service, including:

- Highway – Rail Grade Crossing Safety Improvements CSXT Hudson Line (MP75.8- 140): ES-1 (Completed)
- Improvements to the signal system and grade crossings between Poughkeepsie and Albany-Rensselaer: ES-3 (Completed)
- Installation of a second track from Albany to Schenectady: ES-10 (Completion in 2017)
- An additional fourth track in the Albany-Rensselaer Station: ES-9 (Completed)
- A complete renovation of the station building at Schenectady and other improvements: EW-01 (Construction Underway)
- Station improvements at Syracuse to reduce congestion between passenger and freight trains: EW-6 (Construction Underway)
- A new station building at Rochester: EW-19 (Completion in 2017)
- Niagara Falls Station – new intermodal Transportation Center: EW-13 (Completed)

4.2 Build Alternatives

All the **Build Alternatives** involve the addition of passing sidings and tracks, along with bridge replacements and station improvements. All require a replacement of the Livingston Avenue Moveable Bridge over the Hudson River between Rensselaer and Albany. The supporting projects for each of the **Build Alternatives** go beyond the initial improvements to be completed for the **Base Alternative**. These elements are shown in Exhibit 4-1.

Exhibit 4-1 Summary New/Improved Infrastructure needed for Alternatives¹⁵

Improvement/Addition	Alternative				
	Base	90A	90B	110	125
Miles of new mainline track	36	54	---	---	243 Double track
Miles of dedicated third track		10	283	283	10
Miles of dedicated fourth track		---	39	59	---
Miles of elevated track		---	---	---	56
Flyovers		3	2		---
Bridges (undergrade)	34	74	284*	284*	74*
Station Buildings	2	6	5	5	4
Station Facilities and Trackwork	4	6	11	11	9
Bridges (overhead)		90	90	---	---
Grade crossings	25	17	103	102	17

* Totals are for Empire Corridor West Only

4.2.1 Alternative 90A

Alternative 90A incorporates the **Base Alternative** projects and additional infrastructure improvements that reduce conflicts with freight services and improve reliability. This alternative will add 54 miles of track to the main line and 10 miles of additional third track in the Hudson Highlands (on right-of-way owned by Metro-North Railroad), and on right-of-way owned by CSXT between Amsterdam and Fonda, near Utica Station, at Syracuse and in the Rochester area. **Alternative 90A** is able to produce meaningful reductions in trip times by having trains bypass Rhinecliff and Hudson stations between New York City and Albany-Rensselaer, and Utica and Rome stations between Schenectady and Syracuse. As such, **Alternative 90A** offsets any gains in speed with losses of service to the less-heavily used stations. Further reductions in trip time would require additional track capacity that is not provided under this alternative to conserve cost. **Alternative 90A** permits 90 mph operation over significant portions of the Empire Corridor West right-of-way. The **Alternative 90A** includes the following infrastructure improvements:

- West Side Connection Spuyten Duyvil Second Track (MPs 9 to 13); SRP-1¹⁶
- Metro-North – Tarrytown; Pocket Track / Interlocking (MPs 23.8 to 25.0); SRP-2
- Metro-North New Signal System (CP 33 to CP 75) and (MPs 32.8 to 75.8); ES-12¹⁷
- Metro-North – New Third Track; (CP 53 to CP 63) and (MPs 53 to 63.5); SRP-3
- Metro-North Poughkeepsie Yard / Storage Facility Track / Signals (CP 71 to CP 75) (MPs 71 to 75.8); ES-13
- Rhinecliff Station Improvements (MP 89.2); SRP-11
- Hudson Line Reliability Improvements New Control Points; (CP 82, CP 99, CP 136) and (MPs 82 to 136); ES-05

¹⁵ High Speed Rail Empire Corridor Program, Tier 1 Draft EIS, Chapter 3: Exhibit 3-5; page 3-12

¹⁶ SRP means State Rail Plan.

¹⁷ ES means Empire Corridor South.

- Hudson Line Reliability Improvements Rock Slope Stabilization; (10 locations) (MPs 105.3 to 130); ES-04
- Hudson Station / Track Geometry Improvements (MPs 114.5 to 115); ES-14
- Livingston Avenue Bridge Replacement Project (MPs 143); ES-15
- Mohawk Subdivision – New Main Track (CP 169 to CP 179) (MPs 169 to 178.5); EW-14a¹⁸
- Mohawk Subdivision Congestion Relief (CP 175, CP 239 and CP 248) and (MPs 175 to 294); EW-05
- Amsterdam Station Improvements (MP 177.6); EIS-1¹⁹
- Belle Isle Capacity Improvements; (CP 290 to CP 293) and Syracuse Station Track Improvements; (MPs 290 to 294); EIS-6
- Rochester Subdivision - Reliability Third Main Track; (CP 373 to CP 382) and (MPs 373 to 382); EW-16
- Rochester Subdivision - Third Main Track; (MP 382 to 393); EW-20
- Buffalo Depew Station Improvements; (MPs 429.5 to 432.5); EIS-10
- Niagara Subdivision Double Track; (CP 17 to CP 22) and (MPs QDN17 to QDN23.8); EW-17
- Niagara Falls Maintenance Facility / Yard Improvements (MP QDN27); EW-18
- Niagara Falls Track Improvements; (MPs QDN25 to QDN28); EIS-12

4.2.2 Alternative 90B

Alternative 90B builds significantly upon the **Alternative 90A** and **Base Alternative** infrastructure improvements with a series of short- and long-range improvements, adding 283 miles of third track and 39 miles of fourth track to enable nearly complete separation of freight and passenger trains on reserved tracks.²⁰ Additional trains are added and serve all stations, producing meaningful trip time reductions. **Alternative 90B** allows 90 mph operation over most of the Empire Corridor West right-of-way. As Alternative 90B has been selected by NYSDOT as its **Preferred Alternative**, rather than list the supporting infrastructure improvements here, they have been organized into 20 segments (discussed in Section 7.0 of this SDP), to demonstrate detailed costing, phasing, and operational benefits over the 25-year life of the program.

4.2.3 Alternative 110

Alternative 110 builds on **Alternative 90B** and adds 20 miles of 4th track parallel to the existing freight tracks, providing a completely separate two-track passenger service and virtually eliminating any conflicts between passenger and freight trains between Albany and Niagara Falls. These improvements enable trains to attain a top speed of 110 mph, increasing average speeds

¹⁸ EW means Empire Corridor West.

¹⁹ EIS means High Speed Rail Empire Corridor Tier 1 Final EIS

²⁰ Freight and passenger trains can operate on non-designated tracks when necessary but would normally be confined to their designated track assignments.

over the corridor above what can be achieved with either **Alternative 90A** or **90B**. In considering **Alternative 110**, it is important to understand that CSXT, the owner of the right-of-way, requires for reasons of safety that the new 110-mph passenger train tracks be separated at least 30 feet from the existing freight tracks. In many places along the route, it is only possible to produce this separation by acquiring additional property beyond the existing footprint of the existing railroad right-of-way. In other places, even with the separate passenger tracks, it is not possible to achieve a 110-mph operation due to curves in the track alignment. Because of these encumbrances, **Alternative 110** produces its higher speed over a relatively small portion of the route. Because of the required property acquisition and the separation requirement, **Alternative 110** has higher costs than **Alternative 90B** while achieving only a modest improvement in overall performance.

4.2.4 Alternative 125

Alternative 125 would construct an entirely new two-track grade-separated electrified corridor (with overhead catenary wire for power delivery to the trains) between Albany and Buffalo dedicated to High Speed passenger rail service and would fall into FRA's "Core Express" category. While offering the highest operating speeds, **Alternative 125** requires significantly more property to enable the creation of an entirely new rail right-of-way apart from the existing CSXT freight/passenger right-of-way used under all other alternatives. Around Albany, Syracuse, Rochester, and Buffalo, the new corridor would roughly parallel the existing corridor on a combination of new and existing right-of-way to provide express service (15 round trips) to existing stations in these cities. The existing four daily round trips to Buffalo (of which three continue to Niagara Falls) would be maintained on the existing right-of-way. Between Albany and Buffalo, the new corridor would follow an alignment designed to balance the competing demands of operating speed, cost and environmental impacts. Along Empire Corridor West, existing service to all existing stations would be maintained, but express service along **Alternative 125** would only be provided to Albany-Rensselaer, Syracuse, Rochester, and Buffalo Exchange Street stations. **Alternative 125** would not include station improvements proposed for **Alternatives 90B** and **110** for Utica, Rome, Amsterdam and Schenectady. **Alternative 125** is far more costly than any of the other **Build Alternatives** (more than double the cost of **Alternative 90B**). Overall, **Alternative 125** requires the highest level of public investment with the longest lead time for achieving beneficial use. It was estimated that with the environmental review process, construction and funding requirements, **Alternative 125** would take 15 years before the first segment between Albany-Rensselaer and Syracuse could be completed and operational.

4.3 Preferred Alternative

From an evaluation of the benefits, costs and impacts of the alternatives, **Alternative 90B** was determined to be the best means of achieving the program objectives and meeting the purpose and need for the program. Implementation of **Alternative 90B** can be phased over time, in line with available funding, and produce measurable improvements in both speed and reliability as the program advances. Accordingly, **Alternative 90B** was selected as the **Preferred Alternative** for the program.

The SDP for the **Preferred Alternative** employs a strategy of phased expansion of service frequency on the Empire Capital District Connection portion of the Empire Corridor from the current 13 round-trips to a total of 17 round-trips per day by year 5 of a 25-year implementation schedule. Overall, by the end of the fifth year of the program, all Empire Capital District Connection trains will save 10-15 minutes from the current 2-½ hour trip time between Albany-

Rensselaer and New York City; trip time for selected express trains would be reduced to 2 hours. Key elements of the **Preferred Alternative** include projects to deliver 110 mph operating speeds in areas north of Poughkeepsie, along with strategic upgrades on Metro-North Railroad south of Poughkeepsie to increase operating flexibility. The Capital District Connection serves over 90 percent of the Empire Corridor's total ridership, and the **Preferred Alternative** would provide hourly service at key travel times during the day over this segment, ensuring that the line keeps pace with anticipated ridership growth.

For the Empire Corridor Gateway, service frequencies would be increased from four daily trains to eight within the first five years of program implementation. Further increases in speed and improvements in reliability would emerge gradually over the subsequent twenty years as track and signal improvements eliminate bottlenecks and increase train throughput capacity over critical sections.

5.0 SERVICE DEVELOPMENT PLAN

The SDP demonstrates the physical and operational feasibility of the Preferred Alternative. It amplifies and expands information contained in the Tier 1 EIS to establish practical schedules for construction of its separate elements (bridges, signals, switches, tracks) and for the introduction of expanded service as system capacity is increased. The SDP shows how system performance can be improved as funding is provided for specific improvements aimed at eliminating bottlenecks, increasing separation between freight and passenger services, and improving stations. The SDP engages train simulations and detailed operational modeling to establish specific train operating solutions that advance towards program goals and objectives, continually improving service and growing ridership. The following sections explain the detailed technical methodologies employed during development of the SDP.

5.1 Strategic Considerations

The SDP (see Exhibit 5-1) addresses specific strategic considerations and operating strategies that serve as program drivers.

Exhibit 5-1 Service Development Plan Factors



Strategic considerations include:

- A **Concept of Operations** defines how the intercity rail passenger service will operate to achieve program objectives.
- **Service Standards** set minimum levels of performance to be achieved through program implementation.
- Establishing an **Appearance of the Service**, creates a “brand” or distinctive visual signature by which travelers can recognize and develop loyalty to the service.
- Recognizing available **Operating Resources** (personnel) defines how the service can be upgraded in terms of labor rules and availability.
- The availability of **Operating Assistance** and **Investment Funding** for rolling stock and infrastructure improvements controls the pace at which infrastructure improvements can be implemented.

These elements are discussed in greater detail later in this section.

5.1.1 Concept of Operations

A Concept of Operations is developed by identifying deficiencies in existing services and establishing feasible changes to services that will achieve the program objectives.

The Concept of Operations provides the framework for the development of the train schedules, providing a general approach to:

- **Schedule Format** – consistent arrangement of departure times for trains; use of memory patterns, the extent to which trains depart at the same time each day.
- **Frequency of Service** – days of operations for the trains, and route segments being served.
- **Headways** – periods of the day, when it will be advantageous for trains to operate on hourly or uniform time spacing between trains.
- **Stopping Pattern** – stations that will be served by each train and determining the load factor that can be achieved by offering express or local trains.
- **Capacity** – determine the number of passenger coaches required to meet ridership goals and evaluate consist formulation and operability based on the schedule.

From the program's Concept of Operations, an operating timetable is developed with supporting train schedules and the necessary operating plans, including Train and Engine Crews Assignments and Equipment Utilizations necessary to operate the railroad.

Key goals of the **Concept of Operations** include:

- Provide the seat capacity to keep pace with **Ridership Growth**.
- Increase corridor **Mode Share**.
- Support corridor **Economic Growth** and revitalization.
- Realize **Environmental Benefits** due to the shift of travelers from more polluting travel modes to less polluting and more energy efficient rail services.

5.1.2 Service Standards

Standards for service development:

- Defines the composition of trains with coaches and Business Class to accommodate anticipated ridership demands;
- Identifies the service amenities to be offered to passengers including seats, luggage storage areas, seat lighting, availability of Wi-Fi and lavatory design;
- Establishes the criteria for trains being assigned Café Cars as a component of the strategy to demonstrate the superiority of intercity rail service to other travel modes; and
- Identifies amenities offered to passengers at each station, including ticketing, bicycle storage and baggage handling and storage, wi-fi, parking, and rental cars.

5.1.3 Appearance of the Service – “Branding” the Service

Create a strong service identity and visual brand for the service and initiate activities to develop a culture focused on customer satisfaction. Build brand awareness through the consistent application of visual elements such as an identifying logo, graphic standards, colors, and personnel uniforms.

5.1.4 Operating Resources

Determine the availability of operating resources with a focus on:

- Certifying the availability of **Route and Track Capacity** to support schedules and running times for the operating timetable developed from the Concept of Operations;
- Identifying the **Operational Capabilities** of the existing Infrastructure and deficiencies preventing support of the operating timetable developed from the Concept of Operations, and the improvements necessary to rectify them;
- Determining the ability of **shops and yards** to support the planned service, identify deficiencies, and the improvements necessary to rectify them;
- Using the Equipment Utilization Plan, evaluating the potential of the existing **Rolling Stock Fleet** to operate the planned service, and determining further equipment needs; and
- Securing the **commitment of the host railroads** along the route to partner with NYSDOT in supporting the planned operation and identifying factors that must be addressed to avoid interference with host railroad (CSXT/Metro-North) operations.

5.1.5 Operating Assistance and Investment Funding

The Empire Corridor Program is built around an expectation of \$240-\$250 million annually for capital project design and construction, of which 80% will be sought from federal sources, and the balance provided by local, state and private investments. To deliver this level of funding, the following sub-tasks will need to be managed:

- Work through the FRA grant process to identify and solicit federal funding;
- Work with municipalities to coordinate local station-area funding with ongoing Empire Corridor program activities;
- Provide for additional funding where necessary to support operations and maintenance costs;
- Explore and develop private-public partnership opportunities for selected program elements; and
- Secure federal eligibility through MPO and NEPA processes for Empire Corridor projects.

NYSDOT will develop and maintain a program project list from which to drive funding requests to the FRA and other potential funding sources. This list will be meshed with the state budget process to ensure state funding is available to match federal funds that may be secured.

5.2 Operating Strategies

Operating strategies define the level and quality of service NYSDOT will deliver through the Empire Corridor Program. Choices as to train service and passenger amenities will dictate service costs and funding needs. From the Concept of Operations, NYSDOT will define these service attributes as a framework within which to structure the improved services. By dimensioning these service qualities, NYSDOT will define a railroad improvement program in concert with capital construction of projects to eliminate sources of delay and speed train operations. Chapter 6 of this report lays out the specific operating specifications for the proposed service, demonstrates its operational feasibility, and identifies how these drivers will be shaped to ensure the service meets the program needs. Some of the key elements to be included in defining its operating strategy include:

- **Service Plan** – A service plan outlines how trains will operate over the route, which and in what way communities and stations will be served by the rail system, station attributes and amenities, incremental and overall staffing requirements, and the intended positioning of the rail service in the transportation market.
- **Schedule** – The schedule establishes a detailed timetable of train frequencies and trip times, express or skip-stop and local services, and other time-related considerations by which customers can understand their choices in using the service. Defining a schedule establishes the intensity of use of the equipment, crew requirements, yarding and maintenance cycles to be employed, and the implications for shop activities.
- **Crew Assignments** – Crew assignments respond to the Schedule to ensure adequate coverage of all personnel functions in accordance with the Service Plan. Crew assignments must accommodate contractual requirements among rail craft unions and/or of contracted operators and must respect FRA hours of service limitations and other regulatory obligations. Crews are primarily the train and engine crews who operate the trains, along with station personnel as required to address station operating and maintenance requirements, parking operations, baggage handling and storage, ticket sales, and general station facility management and upkeep.
- **Equipment Utilization** – This feature of the SDP prescribes how locomotives and rail coaches will be assigned to achieve the maximum number of trips and capacity using the available equipment fleet in line with operating rules and preventive maintenance requirements. Train consist requirements, yard requirements, and preventive maintenance requirements all determine equipment needs to achieve a specific schedule and type and level of services offered.
- **Amenities** – It will be necessary to define amenities that will be offered to passengers including food and beverage services, choices of seating and accommodations, Wi-Fi, and other services, potentially extending to porter services, bicycle storage and baggage handling in stations and on trains, the provision of wi-fi services on trains or in stations, café and/or meal cars, quiet cars, and other features designed to provide competitive, attractive, and appealing service that wins ridership loyalty.
- **Revenue Policy** – It will be necessary to establish revenue goals that align with desired ridership intentions while also addressing operating and maintenance costs.
- **Customer Service** – A customer service program can range from simple coverage of trains and stations for minimal customer support to an airline-level service orientation. The

decision how to structure the customer service aspects of the service drive certain cost elements that must be addressed in financial planning.

5.2.1 Operating and Financial Performance

This system of oversight and monitoring establishes the measures by which the effectiveness of the program will be tracked. On the basis of these metrics, program progress can be measured and synchronized with funding and other factors, including:

- local support for specific project initiatives;
- operator and owner ability to accommodate projects on the basis of normal preventive maintenance activities; and
- availability of sufficient work windows, technical support, Force Account capabilities, and other support needs by system owners.

Of specific concern is economic performance for the program. This performance can be evaluated through tracking of ridership and revenue compared to forecasts. Achieving ridership and revenue goals are important objectives; while infrastructure improvements are important, the service must attract additional ridership and gain revenue to be successful. While many metrics may be tracked in monitoring implementation progress, key performance objectives of ridership and revenue give the sharpest picture of success and provide critical guidance in shaping subsequent program investments year by year.

5.2.1.1 Ridership

The desired ridership growth must be supported by the capacity to accommodate the new passengers, if the service is to realize the revenue increases gained therefrom. While travel demand forecasts are driven by a combination of train frequency and travel time, it is difficult to assign proportions of riders responding to either or both service qualities. Using cost and travel-time elasticities derived from current travel behavior in the corridor, ridership projections were generated on the basis of specific increments of increasing speed and additional train frequency. Applying these elasticities to increments of travel time improvement and increasing train frequency permitted an estimation of increasing ridership as system service is improved. This forecast projected 1.083 million additional one-way trips over the entire Empire Corridor upon completion of all improvements and attainment of speed, travel time and reliability goals.²¹ This estimate can be tracked to assess how well investments – and the resulting improvements in speed and travel time – are driving ridership growth over time.

5.2.1.2 Revenue

To the extent that additional trains and faster service drive ridership growth, and providing fares are managed properly with respect to competing travel modes, the program can be expected to generate revenue growth in line with projections. It is forecast that the total rail patronage resulting from program implementation will generate \$143 million in annual fare revenues by 2035, of which

²¹ *High Speed Rail Empire Corridor Program, Tier 1 Draft Environmental Impact Statement, Chapter 5: Section 5.6, Exhibit 5-13*

\$62 million would be due to new ridership.²² Using a method similar to that employed to estimate future ridership, it is possible to monitor incremental revenue increases as the program is implemented and adjust program implementation plans as necessary.

²² *High Speed Rail Empire Corridor Program, Tier 1 Draft Environmental Impact Statement, Chapter 5: Section 5.6, Exhibit 5-13*

6.0 SERVICE AND OPERATING PLAN FOR EMPIRE CORRIDOR PREFERRED ALTERNATIVE

The Service and Operating Plan demonstrates through simulation and analytics that the Preferred Alternative is operationally feasible, from the standpoint of train movements, crewing, equipment utilization and cycling, and passenger handling/management.

Beginning with the existing operation, the Service Plan offers specific data in terms of additional train service, coordinated movement of anticipated freight and proposed passenger train operations, stationing, platforming and dwell times, and yard and shop cycles to demonstrate how the service would work, at what cost, and with what revenue.

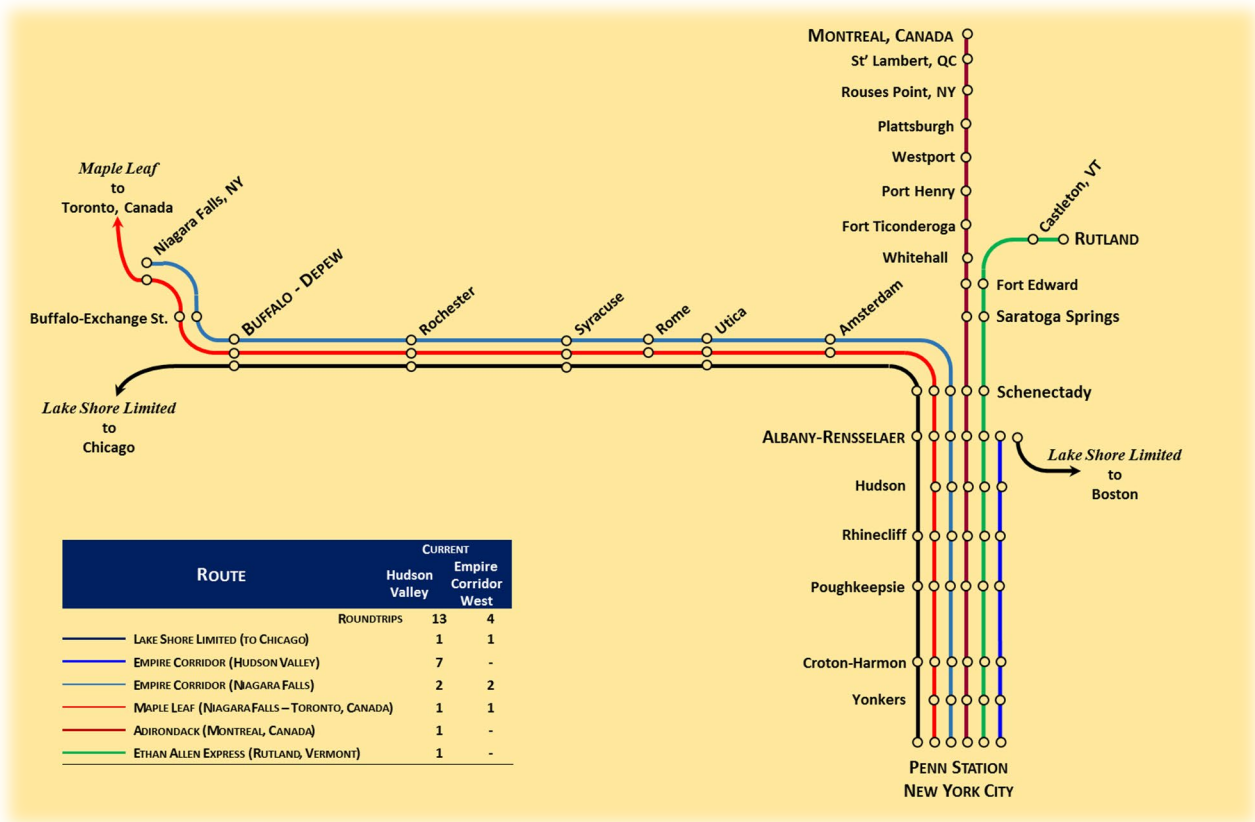
6.1 Existing Train Operation

Currently, the intercity rail passenger service is composed of a main trunk extending from New York City to Albany. At Albany-Rensselaer certain trains terminate their runs while other trains continue (or originate from Albany) to Rutland, Vermont; Montreal and Toronto, Canada; and Buffalo and Niagara Falls. From Buffalo, some “Lake Shore” trains continue to Chicago and points north and west. Exhibit 6-1 shows the distribution of trains and routes that make up the Empire Corridor.

6.2 Proposed Train Operation

The Preferred Alternative changes existing train service on both the Empire Corridor South and the Empire Corridor West segments, with its primary focus on additional service and meaningful trip time reductions. The major change is to add within the first five years of the program 4 daily round trip trains between New York City and Niagara Falls, increasing train service on the Empire Corridor South segment from 13 to 17 daily round trips, and on the Empire Corridor West segment from four to eight daily round trips. An associated goal of this additional service and the accompanying infrastructure improvements is to speed service and eliminate track bottlenecks on Empire Corridor South. This will enable a two-hour express service for certain trains operating between Albany-Rensselaer and New York City (the two-hour threshold is an important perceptual consideration in attracting travelers to this line). Supporting projects focus on upgrading portions of the line between Poughkeepsie and Albany-Rensselaer to 110 mph operation.

Exhibit 6-1 Empire Corridor and Distribution of Intercity Passenger Services



2 CITIES
IN
2 HOURS™

Other Empire Corridor South trains will see up to a 15-minute travel time reduction between New York City and Albany during the first five years, while the travel time for Empire Corridor West trains between Albany and Niagara Falls will shrink from 6 hours to 4-3/4 hours, a reduction of one hour and fifteen minutes. Additionally,

over the 25-year implementation time frame, the entire corridor will see an improvement in on-time performance from the current 80% or less to an anticipated 95.4%, due to the additional capacity allowing trains to pass each other rather than follow in sequence.

Operational improvements under the **Preferred Alternative** include:

- Increasing the number of round-trips between New York City and Albany-Rensselaer from the current 13 round-trips to 17 round-trips
- Increasing the number of round-trips on the Empire Corridor West to Niagara Falls from the current 4 round-trips to 8 round-trips
- Operating certain trains with a 2-hour trip time between Albany-Rensselaer and New York City. All other Empire Corridor South trains will achieve a 15-minute trip time reduction as part of an overall trip time reduction of 90 minutes over the entire run from Niagara Falls to Penn Station New York City. Trains from Empire Corridor West operating through Albany and into the Hudson Valley will be able to achieve greater trip time reductions, at least 75 minutes and potentially somewhat more.

- Improving reliability with an on-time performance target of 95.4 % by the time the program is complete, with significant improvements above current levels as program elements are constructed and bottlenecks and choke points eliminated.

6.3 Concept of Operations

In developing the train schedule for the **Preferred Alternative**, key factors are targeted in the Concept of Operations (numbered below and designated with the prefix, “C”):

- C-1** Achieve a 90-minute trip time reduction for trains operating between New York City and Niagara Falls;
- C-2** Achieve a 15-minute trip time reduction for trains operating between New York City and Albany-Rensselaer;
- C-3** Achieve a 2-hour trip time for designated trains in the Hudson Valley using the 110 miles per hour infrastructure that is part of the Empire Capital District Connection program;
- C-4** Operate an earlier morning train to Albany from New York City to arrive at 9:00 a.m., with a corresponding later evening return trip;
- C-5** Establish all-day hourly service between New York City and Albany;
- C-6** Inaugurate hourly service during mornings and afternoons from Schenectady as part of the completion of the Albany-Rensselaer to Schenectady Double Track Project;
- C-7** Introduce two new morning trains with returning afternoon trains serving Saratoga Springs as part of the Empire Capital District Connection;
- C-8** Operate trains on two-hour headway during daytime hours from Syracuse;
- C-9** Assign equipment to provide nine trains on the western portion of the corridor from Albany-Rensselaer; and
- C-10** Introduce a new morning departure that originates in Albany for Buffalo and Niagara Falls with a later afternoon return trip. This targets an important niche in the transportation market for the Empire Corridor not served by airlines.

6.4 Track Configuration and Operation Modeling

The track arrangements with notations of improvements in speeds for the High Speed Rail Empire Corridor Program EIS are included as Appendix B.

6.4.1 No-Build Track Configuration

The program must begin with the current infrastructure as it is improved with the projects outlined in the **Base Alternative**. As noted in Section 4.1, these include some recent improvements sponsored (and, in some cases, already completed or in currently construction) by NYSDOT.

NYSDOT has supported other improvements in the Hudson Valley (Empire Corridor South) that improve service reliability through installation of a new direct buried signal and communication cable as well as with extensive tie and rail renewal and roadbed surfacing, new grade crossing warning apparatus, and continual upgrading of the signal system. These conditions constitute the

pre-implementation condition and establish the base condition upon which the **Preferred Alternative** will further improve service capabilities and train operating capacity and speed.

6.4.2 Preferred Alternative Track Configuration

Supporting projects of the **Preferred Alternative** focus on upgrading portions of the line between Poughkeepsie and Albany-Rensselaer to 110 mph operation, where they are currently limited by geometry and/or signal controls to 80 mph.

The track configuration required for the **Preferred Alternative** is shown in Volume 2 of the High Speed Rail Empire Corridor Program EIS and is included for reference as Appendix B to this SDP. The required supporting infrastructure improvements for Empire Corridor South, as part of the Empire Capital District Connection, are outlined in Exhibit 6-2.

Exhibit 6-2 Empire Corridor South Infrastructure Improvements

Improvement	Addition
Total Miles of Additional New Track	22
Miles of New Third Track	19
Miles of New Fourth Track	3
Miles of Upgraded Track to 110 mph	108
Miles of Upgraded Track to 90 mph	3
New Interlockings	6
Miles of Upgraded Signal System	67
New High Level Station Platforms	2
Upgraded Bridges	10
Miles of Fence Improvements	42

The required supporting infrastructure improvements for Empire Corridor West are outlined in Exhibit 6-3.

Exhibit 6-3 Empire Corridor West Infrastructure Improvements

Improvement	Addition
Total Miles of Additional New Track	322
Miles of dedicated third track	283
Miles of dedicated fourth track	39
Flyovers	3
Bridges (undergrade)	284
Station Buildings	5
Station Facilities and Trackwork	11
Bridges (overhead)	90
Grade crossings	103

A further explanation of infrastructure improvements and implementation strategy is discussed in Chapter 7, Program Implementation.

6.5 Operations Simulation Modeling

To demonstrate operational feasibility for the **Preferred Alternative**, a series of network models were developed using Berkeley Simulations – Rail Traffic Controller, and the results are listed in Appendix D – Rail Network Simulation Report in Volume 3 of the High Speed Rail Empire Corridor Tier 1 EIS. They demonstrate a largely conflict-free operation with a high degree of schedule reliability upon completion of all program track, signal, bridge, and station initiatives contained in the Preferred Alternative.

6.5.1 Methodology

The methodology for developing the Operations Simulation models followed industry practices to produce data and reports that would support the development of the operating schedules and programs for the expanded passenger rail service, integrated with existing freight rail services. Deliverables from the Operation Simulation modeling for the **Base** and four **Build Alternatives** included:

- Train Performance Calculations
- Time + Distance (Stringlines)

Information from CSXT, Amtrak and MNR, including Employee Timetables, Operating Rule Books, Track Charts and Diagrams and Signal Control Line Drawings were used to develop a network model of the existing infrastructure that formed the foundation for the Base Alternative. Working from this Base Alternative scenario, modifications were made to the simulation model to represent additional tracks and switches that would enable greater operational flexibility between tracks, to support the operating requirements and characteristics for each Build Alternative. A test case was conducted using the Base Alternative model and the results validated to calibrate the model. The model was then used to develop the outputs used to develop schedules. Time + Distance Charts were then developed to identify any constraints in the operating plan and potential conflicts so corrections could be made to avoid any future challenges in operating the service for this alternative. Additional simulations and analysis were performed to determine any impacts on freight train operations and the determination of possible On Time Performance.

6.5.2 Results/Model Outputs: Preferred Alternative Operating Plan

Further results with supporting schedules for the **Base** and four **Build Alternatives** are included in Appendix D of Volume 3 of the High Speed Rail Empire Corridor Program Tier 1 Final EIS.

6.5.2.1 Time + Distance Charts

The supporting **Time + Distance Charts (Stringlines)** are included in Exhibit 6-4 for both east and westbound trains. These charts demonstrate the capacity of the improved Empire Corridor to accommodate the planned passenger and freight traffic in 2035 at the intended speeds of operation and headways. As such, the charts demonstrate that the system will run conflict-free under normal operating conditions.

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Legend for Time + Distance Charts

WESTBOUND NEW WESTBOUND
EASTBOUND NEW EASTBOUND

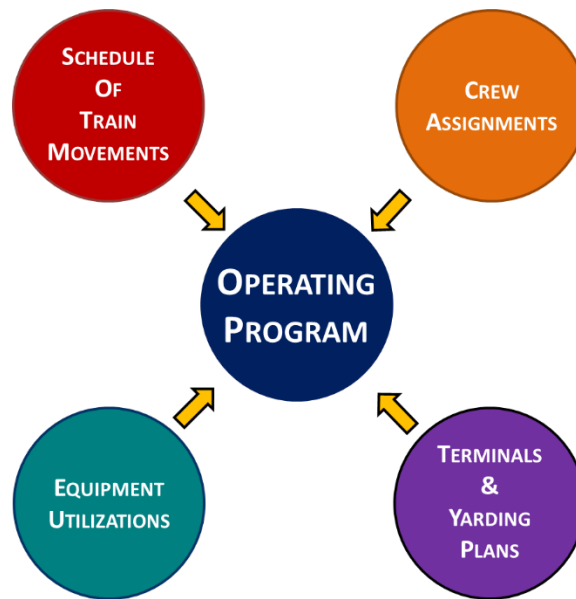


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6.6 Operating Program

The operating program for the Preferred Alternative is built from the Concept of Operations, as shown in Exhibit 6-5. It addresses the detailed requirements for overall system operations, including Crew Assignments, Schedules, Train Cycling Requirements and Equipment Utilization, and Terminal and Yarding Plans. These are described below.

Exhibit 6-5 Operating Program Components



6.6.1 Timetables

The timetable for the Preferred Alternative was built from the existing service on the Empire Corridor and was designed to incorporate the key improvements outlined in the Concept of Operations. These trains are numbered below as even (eastbound or southbound) and odd (westbound or northbound) and designated with the prefix 'C' (relating to NYSDOT's project management system), as follows:

C-1 Trains #'s: - 63, 273, 281, 283, 285, 287, 275 and 64, 270, 280, 282, 284, 286, 274

90-minute overall trip time reduction for trains operating between New York City and Niagara Falls

C-2 Schedule adjusted for all trains in the Hudson Valley, to achieve trip time reduction

15-minute trip time reduction for most trains operating between New York City and Albany-Rensselaer

C-3 Trains #'s – 273, 283, 234, 284 (NYC-Albany)

2-hour trip time for certain trains in the Hudson Valley, taking full advantage of the 110 miles per hour infrastructure that is part of the Empire Capital District Connection program.

C-4 Trains #'s - 231 and 272

Operate an earlier morning train to Albany from New York City to arrive by 9:00 a.m., with a corresponding later evening return trip.

C-5 Hourly service pattern established at Albany-Rensselaer from 5:00 AM to 8:00 PM with 18 departures and hourly service pattern from New York City from 6:15 AM to 7:00 PM with 16 departures; with two late evening trains to balance service with 18 trains in each direction.

Establish hourly service between New York City and Albany

C-6 Hourly service from Schenectady to Niagara Falls from 6:30 AM to 11:25 AM with 6 departures, and 7 arrivals from Niagara Falls to Schenectady from 4:50 pm to 8:50 pm.

Inaugurate hourly service from Schenectady during mornings and afternoons, as part of the completion of the Albany-Rensselaer to Schenectady Double Track Project

C-7 Trains #'s - 234, 238 and 237, 239

Introduce two new morning trains with returning afternoon trains serving Saratoga Springs as part of the Empire Capital District Connection.

C-8 Bi-hourly service pattern established with expanded fleet of locomotives and coaches

Operate trains on two-hour headway during daytime hours from Syracuse to New York City

C-9 Service pattern established

Assign equipment to provide nine trains on the western portion of the corridor from Albany-Rensselaer

C-10 Trains #'s – 271 and 274

Introduce a new morning departure originating in Albany for Buffalo and Niagara Falls, with later afternoon return trip. Designed to target important niche in the transportation market for the Empire Corridor that is not served by commercial airlines.

6.6.2 Schedules

The operating schedules are shown in Exhibits 6-6 and 6-7, and were developed to meet the following criteria:

- Meet the program goals for trip time reductions and expanded frequency of service.
- Achieve a 7 hour and 36-minute run time from Niagara Falls to New York City.
- Introduce trip time savings between Albany-Rensselaer and New York City.
- Maximize equipment and crew utilizations by introducing Syracuse as an intermediate terminal. The 4 hour and 50-minute run time from Syracuse to New York City is competitive with air service to mid-town Manhattan and has the capacity and trip time savings to attract passengers from airlines and from their automobiles, supporting program goals.

Exhibit 6-6 Preferred Alternative Westbound Schedule

Conceptual - Westbound

Western Corridor Hudson Valley	1	***	2	***	3	***	4	***	5	***	6	7	***	8	***	9	***	***	***
	***	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Destination	Niagara Falls	Albany	Toronto	Montreal	Syracuse	Albany	Niagara Falls	Albany	Niagara Falls	Saratoga Springs	Niagara Falls	Chicago	Rutland	Niagara Falls	Saratoga Springs	Syracuse	Albany	Albany	Albany
Train Number			Maple Leaf	Adirondack					Empire State Express			Lake Shore Limited	Ethan Allen Express						
Frequency	Mon - Fri	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Mon-Fri	Daily	Daily	Daily	Daily
New York City	...	6:15 AM	7:15 AM	8:15 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	3:45 PM	4:30 PM	5:00 PM	5:30 PM	6:00 PM	7:00 PM	9:00 PM	11:00 PM
Yonkers	...	...	...	...	...	10:15 AM	11:15 AM	12:15 PM	...	2:15 PM	...	...	...	...	...	...	...	9:15 PM	...
Croton-Harmon	...	7:00 AM	8:00 AM	9:00 AM	...	10:45 AM	11:45 AM	12:45 PM	...	2:45 PM	3:45 PM	4:30 PM	5:15 PM	...	...	6:45 PM	7:45 PM	9:45 PM	11:45 PM
Poughkeepsie	...	7:30 AM	8:30 AM	9:30 AM	...	11:15 AM	12:15 PM	1:15 PM	...	3:15 PM	4:15 PM	...	5:45 PM	...	...	...	8:15 PM	10:15 PM	12:15 AM
Rhinecliff	...	7:45 AM	8:45 AM	9:45 AM	...	11:30 AM	12:30 PM	1:30 PM	...	3:30 PM	4:30 PM	...	6:00 PM	6:30 PM	7:00 PM	7:30 PM	8:30 PM	10:30 PM	12:30 AM
Hudson	...	8:05 AM	9:05 AM	10:05 AM	...	11:50 AM	12:50 PM	1:50 PM	...	3:50 PM	4:50 PM	...	6:20 PM	6:50 PM	7:20 PM	7:50 PM	8:50 PM	10:50 PM	12:50 AM
ALBANY - RENSSELAER	...	8:30 AM	9:30 AM	10:30 AM	11:00 AM	12:15 PM	1:15 PM	2:15 PM	3:00 PM	4:15 PM	5:15 PM	6:00 PM	6:45 PM	7:15 PM	7:45 PM	8:15 PM	9:15 PM	11:15 PM	1:15 AM
	6:30 AM	...	9:45 AM	10:45 AM	11:15 AM	...	1:30 PM	...	3:15 PM	4:30 PM	5:30 PM	6:30 PM	7:00 PM	7:30 PM	8:00 PM	8:30 PM	...	...	...
Schenectady	6:50 AM	...	10:05 AM	11:05 AM	11:35 AM	...	1:50 PM	...	3:35 PM	4:50 PM	5:50 PM	6:50 PM	7:20 PM	7:50 PM	8:20 PM	8:50 PM	...	...	...
Amsterdam	7:10 AM	...	10:25 AM	...	11:55 AM	...	2:10 PM	...	3:55 PM	...	6:10 PM	...	...	8:10 PM	...	9:10 PM	...	...	...
Utica	7:55 AM	...	11:10 AM	...	12:40 PM	...	2:55 PM	...	4:40 PM	...	6:55 PM	7:50 PM	...	8:55 PM	...	9:55 PM	...	...	...
Rome	8:10 AM	...	11:25 AM	...	12:55 PM	...	3:10 PM	...	4:55 PM	...	7:10 PM	...	...	9:10 PM	...	10:10 PM	...	...	...
SYRACUSE	8:50 AM	...	12:05 PM	...	1:35 PM	...	3:50 PM	...	5:35 PM	...	7:50 PM	8:45 PM	...	9:50 PM	...	10:50 PM	...	...	...
Rochester	10:00AM	...	1:15 PM	...	...	...	5:00 PM	...	6:45 PM	...	9:00 PM	9:55 PM	...	11:00 PM	...	...	...	...	...
BUFFALO - DEPEW	10:50 AM	...	2:05 PM	...	...	...	5:50 PM	...	7:35 PM	...	9:50 PM	10:45 PM	...	11:50 PM	...	...	...	...	...
Buffalo-Exchange Street	11:05 AM	...	2:20 PM	...	...	...	6:05 PM	...	7:50 PM	...	10:05 PM	...	...	12:05 AM	...	...	...	...	...
NIAGARA FALLS	11:41 AM	...	2:51 PM	...	...	...	6:36 PM	...	8:21 PM	...	10:36 PM	...	...	12:36 AM	...	...	...	...	...
Canadian Border	...	...	3:05 PM	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Toronto	...	...	6:05 PM	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Saratoga Springs	...	...	...	11:35 AM	...	...	...	...	...	5:20 PM	...	...	7:50PM	...	8:50 PM	...	...	...	...
Fort Edward	...	...	...	12:00 PM	...	...	...	...	...	...	...	...	8:15 PM	...	...	...	...	...	...
RUTLAND	...	...	...	...	...	...	...	...	...	...	...	...	9:15 PM	...	...	...	...	...	...
Whitehall	...	...	...	12:25 PM	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fort Ticonderoga	...	...	...	12:58 PM	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Port Henry	...	...	...	1:15 PM	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Westport	...	...	...	1:35 PM	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Port Kent	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Plattsburgh	...	...	...	2:55 PM	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rouses Point	...	...	...	3:20 PM	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
MONTREAL-Central Station	...	...	...	5:00 PM	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

New: Albany-Rensselaer - New York City (Penn Station)

New: Western Empire Corridor

Exhibit 6-7 Preferred Alternative Eastbound Schedule

Conceptual - Eastbound

Western Corridor Hudson Valley	***	***	***	***	1	***	2	***	3	***	4	***	5	6	***	7	***	8	9
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	***
Originates	Albany	Albany	Saratoga Springs	Albany	Syracuse	Saratoga Springs	Niagara Falls	Rutland	Niagara Falls	Albany	Niagara Falls	Albany	Chicago	Niagara Falls	Montreal	Toronto	Albany	Syracuse	Niagara Falls
Train Number	#230	#232	#234	#236	#270	#238	#280	Ethan Allen Express #290	#282	#242	Empire State Express #284	#244	#48	#286	#68	#64	#246	#272	#274
Frequency	Mon-Fri	Daily	Mon-Fri	Daily	Daily	Mon-Fri	Daily	Daily	Daily	Daily	Daily	Mon-Fri	Daily	Daily	Daily	Daily	Daily	Daily	Mon-Fri
MONTREAL-Central Station	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10:50 AM	...	...	...	...
Rouses Point	...	...	...	...	...	...	...	...	...	...	...	...	...	...	12:15 PM	...	...	...	...
Plattsburgh	...	...	...	...	...	...	...	...	...	...	...	...	...	...	12:45 PM	...	...	...	...
Port Kent	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Westport	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1:45 PM	...	...	...	...
Port Henry	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2:10 PM	...	...	...	...
Fort Ticonderoga	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2:35 PM	...	...	...	...
Whitehall	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3:05 PM	...	...	...	...
RUTLAND	...	...	...	...	...	...	...	8:30 AM	...	...	...	...	...	...	...	...	...	...	...
Fort Edward	...	...	...	...	...	...	...	9:30 AM	...	...	...	...	...	...	3:30 PM	...	...	...	...
Saratoga Springs	...	...	6:00 AM	...	...	8:00 AM	...	9:55 AM	...	...	...	...	...	...	3:55 PM	...	...	...	...
Toronto	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9:30 AM	...	...	...
Canadian Border	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11:30 AM	...	...	...
NIAGARA FALLS	...	...	...	...	...	...	4:40 AM	...	6:40 AM	...	8:40 AM	...	...	10:40 AM	...	12:40 PM	...	...	3:40 PM
Buffalo-Exchange Street	...	...	...	...	...	...	5:10 AM	...	7:10 AM	...	9:10 AM	...	...	11:10 AM	...	1:10 PM	...	...	4:10 PM
BUFFALO-DEPEW	...	...	...	...	...	...	5:25 AM	...	7:25 AM	...	9:25 AM	...	10:25 AM	11:25 PM	...	1:25 PM	...	...	4:25 PM
Rochester	...	...	...	...	...	...	6:15 AM	...	8:15 AM	...	10:15 AM	...	11:15 AM	12:15 PM	...	2:15 PM	...	...	5:15 PM
SYRACUSE	...	...	...	...	5:25 AM	...	7:25 AM	...	9:25 AM	...	11:25 AM	...	12:25 PM	1:25 PM	...	3:25 PM	...	5:25 PM	6:25 PM
Rome	...	...	...	...	6:05 AM	...	8:05 AM	...	10:05 AM	...	12:05 PM	...	...	2:05 PM	...	4:05 PM	...	6:05 PM	7:05 PM
Utica	...	...	...	...	6:20 AM	...	8:20 AM	...	10:20 AM	...	12:20 PM	...	1:20 PM	2:20 PM	...	4:20 PM	...	6:20 PM	7:20 PM
Amsterdam	...	...	...	...	7:05 AM	...	9:05 AM	...	11:05 AM	...	1:05 PM	...	...	3:05 PM	...	5:05 PM	...	7:05 PM	8:05 PM
Schenectady	...	...	6:30 AM	...	7:25 AM	8:30 AM	9:25 AM	10:25 AM	11:25 AM	...	1:25 PM	...	2:25 PM	3:25 PM	4:25 PM	5:25 PM	...	7:25 PM	8:25 PM
ALBANY - RENSSELAER	...	...	6:50 AM	...	7:45 AM	8:50 AM	9:45 AM	10:45 AM	11:45 AM	...	1:45 PM	...	2:45 PM	3:45 PM	4:45 PM	5:45 PM	...	7:45 PM	8:45 PM
	5:00 AM	6:00 AM	7:00 AM	7:30 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	3:30 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	...
Hudson	5:25 AM	6:25 AM	...	7:50 AM	8:25 AM	9:25 AM	10:25 AM	11:25 AM	12:25 PM	1:25 PM	...	3:25 PM	...	4:25 PM	5:25 PM	6:25 PM	7:25 PM	8:25 PM	...
Rhinecliff	5:50 AM	6:50 AM	...	8:10 AM	8:50 AM	9:50 AM	10:50 AM	11:50 AM	12:50 PM	1:50 PM	...	3:50 PM	...	4:50 PM	5:50 PM	6:50 PM	7:50 PM	8:50 PM	...
Poughkeepsie	...	...	...	...	9:05 AM	10:05 AM	11:05 AM	12:05 PM	1:05 PM	2:05 PM	...	4:05 PM	...	5:05 PM	6:05 PM	7:05 PM	8:05 PM	9:05 PM	...
Croton-Harmon	6:35 AM	7:35 PM	...	...	9:35 AM	10:35 AM	11:35 AM	12:35 PM	1:35 PM	2:35 PM	...	4:35 PM	5:10 PM	5:35 PM	6:35 PM	7:35 PM	8:35 PM	9:35 PM	...
Yonkers	...	...	...	...	...	10:55 AM	...	12:55 PM	...	2:55 PM	...	4:55 PM	...	...	6:55 PM	...	8:55 PM	...	...
New York City	7:10 AM	8:10 AM	9:00 AM	9:40 AM	10:15 AM	11:15 AM	12:15 PM	1:15 PM	2:15 PM	3:15 PM	4:00 PM	5:15 PM	5:45 PM	6:15 PM	7:15 PM	8:15 PM	9:15 PM	10:15 PM	...

New: Albany-Rensselaer - New York City (Penn Station)

New: Western Empire Corridor

6.6.3 Equipment

Consists

Currently all Empire Corridor trains operate with a fixed assignment of equipment, with all trains consisting of:

- 1 – Locomotive: Genesis P32AC-DM (required for operation Albany-Rensselaer to New York City)
- 4 – Amfleet I Capstone Standard Coaches
- 1 – Club / Dinette (Café Car with Business Class Section)

Additional coaches may cycle on certain trains between New York City and Albany-Rensselaer, based on availability for maintenance and repair.

A 15-minute station dwell time is included in most westbound schedules of Empire Corridor at Albany-Rensselaer for fueling or locomotive changes.

Assigning trains so that the line runs with all trains having the same number of coaches in the future will streamline the car assignment process of coaches to trains, favorably impacting operations in several ways:

- Less yard activity making up trains; lower personnel-count for operation.
- Simpler preventive maintenance routines based on predictable and standard cycling of equipment.

Equipment Utilization

Equipment utilization diagrams are shown for the current assignment in Exhibits 6-8 and 6-9, outlining the equipment assignments for the **Preferred Alternative**.

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Exhibit 6-8 Current Equipment Utilization Assignments

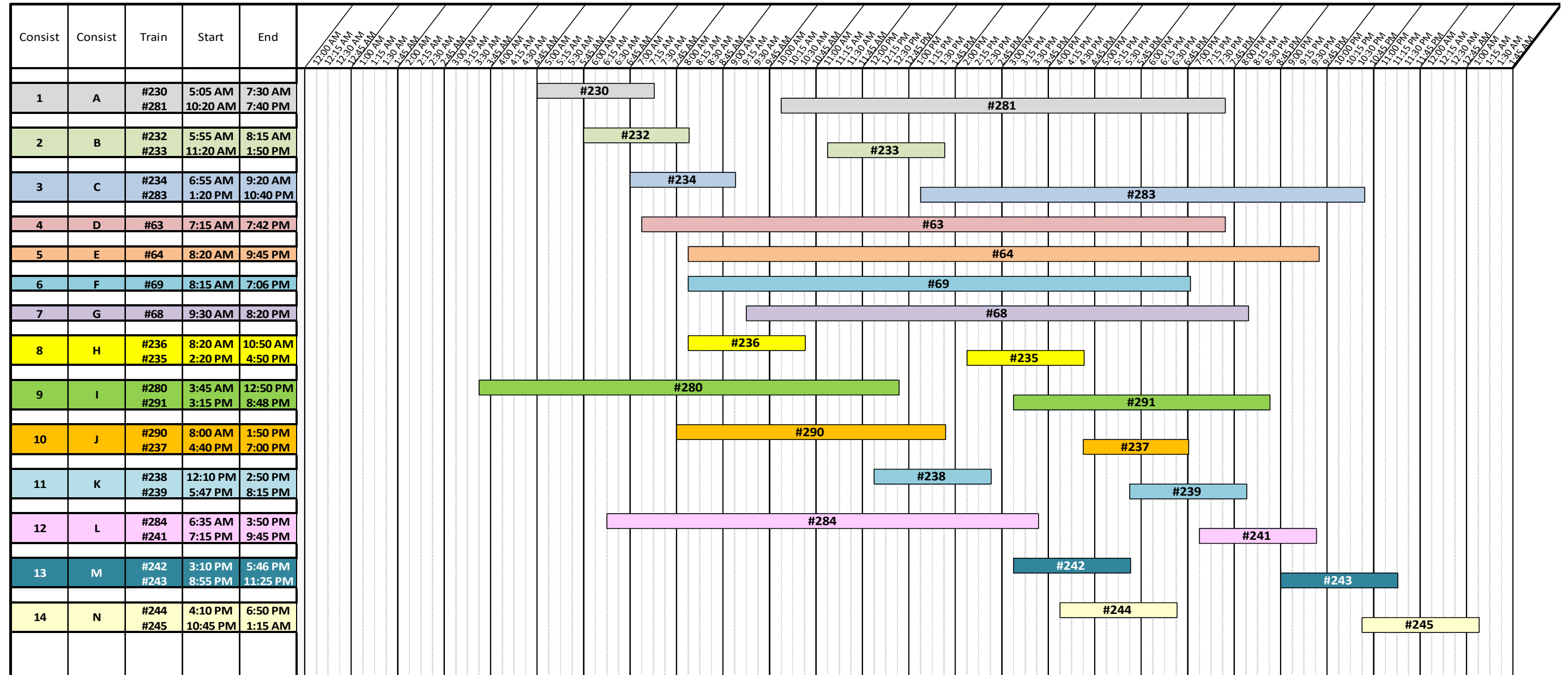
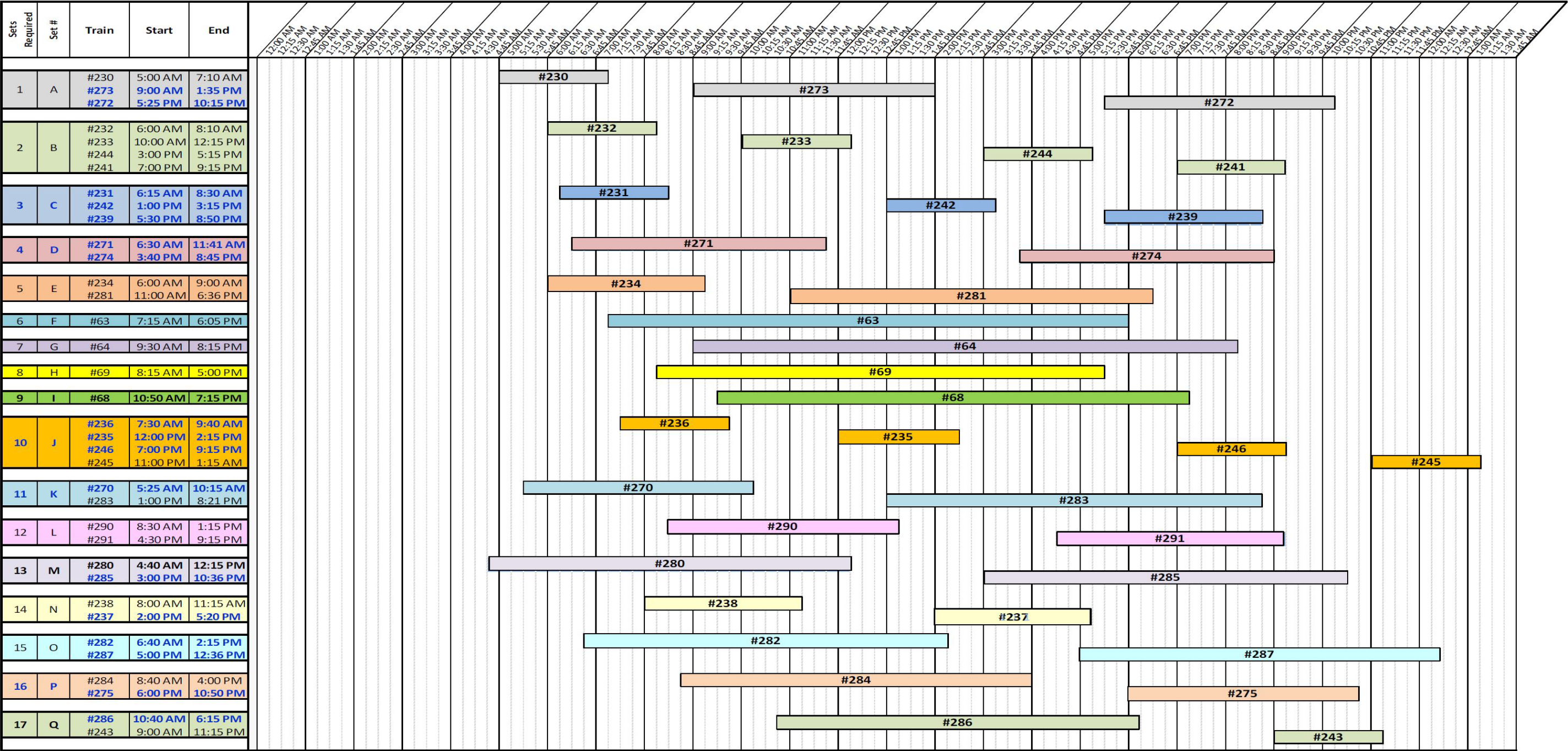


Exhibit 6-9 Preferred Alternative Equipment Utilization Assignments



6.6.4 Train Crew Scheduling

Train and Engine (T&E) crew assignments for the Empire Corridor are largely made from a central control point with crews based from a home terminal or central location at Albany-Rensselaer. Basing the crews at Albany-Rensselaer provides the greatest efficiency in optimizing crew time for trips and the maintenance of crew “extra” lists (personnel available to fill in for workers who call in sick or take vacation). Working from this central location also enables crews to become cross-qualified between the different service segments west and south of Albany, maximizing the availability of employees with fewer constraints for assignments.

Crew assignments are established with the process outlined in Exhibit 6-10, Days of Operation, for each service are given in Exhibit 6-11.

Exhibit 6-10 Days of Operation



The process starts with the determination of a run, a train schedule, and identification of the T&E crews required to operate all the trains for that schedule. Runs are then organized into round-trip couplets against which train crews are assigned by day of the week, thus allowing crews to return to their points of origin at the ends of their shifts. These assignments also recognize designated crew relief days. The couplets on the Empire Corridor are organized by route (Ethan Allen, Lake Shore Limited, Montreal runs, Niagara Falls trains).

Factors that come into play in organizing the crew couplets are:

- Organized within the parameters of the existing labor agreements;
- Consistent with the Federal “Railroad Hours of Service Law;”
- Couplets are organized for outlying terminals “first-in & first-out” to minimize total hours on duty for crews;
- The assignments are organized for gaining future crew hour efficiencies between Albany-Rensselaer and Niagara Falls or Niagara Falls, Ontario; and
- The crew couplets integrate the increased service with existing trains to maximize crew efficiencies. New trains are shown in **BLUE BOLD** in the crew couplet tables.

Exhibit 6-11 Days of Operations

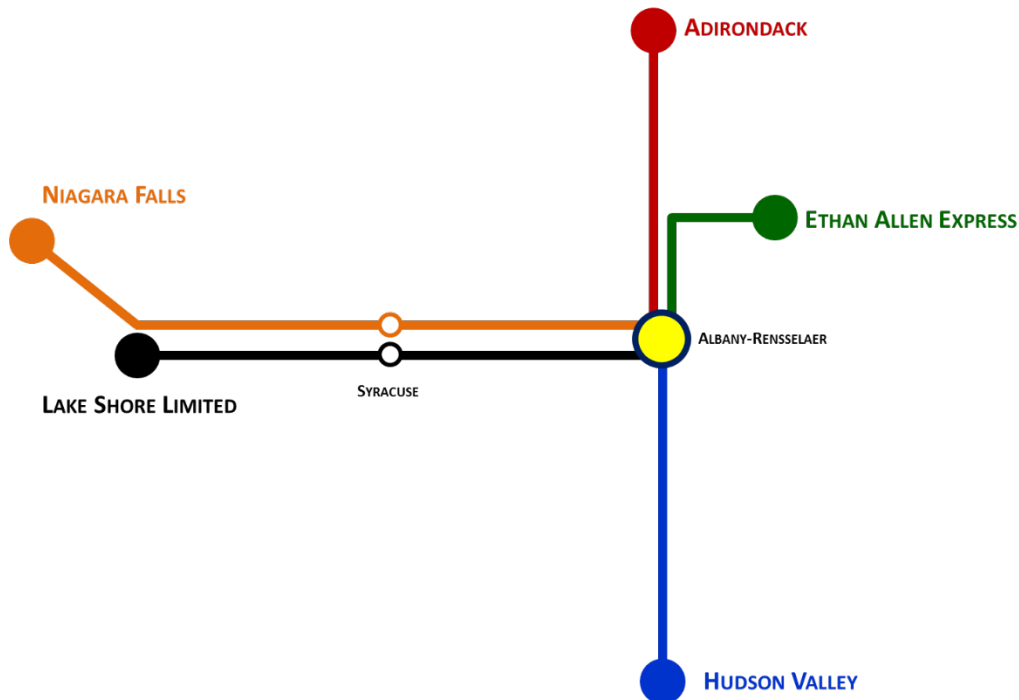
No.	Schedule	MON	TUES	WED	THUR	FRI	SAT	SUN
#230	ALB-NYC	✓	✓	✓	✓	✓		
#232	ALB-NYC	✓	✓	✓	✓	✓	✓	✓
#234	SAR-NYC	✓	✓	✓	✓	✓		
#236	ALB-NYC	✓	✓	✓	✓	✓	✓	✓
#270	SYR-NYC	✓	✓	✓	✓	✓	✓	✓
#238	SAR-NYC	✓	✓	✓	✓	✓		
#280	NFL-NYC	✓	✓	✓	✓	✓	✓	✓
#290	Rutland-NYC	✓	✓	✓	✓	✓	✓	✓
#282	NFL-NYC	✓	✓	✓	✓	✓	✓	✓
#242	ALB-NYC	✓	✓	✓	✓	✓	✓	✓
#284	NFL-NYC	✓	✓	✓	✓	✓	✓	✓
#244	ALB-NYC	✓	✓	✓	✓	✓	✓	✓
#48	Chicago-NYC	✓	✓	✓	✓	✓	✓	✓
#286	NFL-NYC	✓	✓	✓	✓	✓	✓	✓
#68	Montreal - NYC	✓	✓	✓	✓	✓	✓	✓
#64	Toronto - NYC	✓	✓	✓	✓	✓	✓	✓
#246	ALB-NYC	✓	✓	✓	✓	✓		
#272	SYR-NYC	✓	✓	✓	✓	✓	✓	✓
#274	NFL-ALB	✓	✓	✓	✓	✓		
#271	ALB-NFL	✓	✓	✓	✓	✓		
#231	NYC-ALB	✓	✓	✓	✓	✓	✓	✓
#63	NYC-Toronto	✓	✓	✓	✓	✓	✓	✓
#69	NYC-Montreal	✓	✓	✓	✓	✓	✓	✓
#273	NYC-SYR	✓	✓	✓	✓	✓	✓	✓
#233	NYC-ALB	✓	✓	✓	✓	✓	✓	✓
#281	NYC-NFL	✓	✓	✓	✓	✓	✓	✓
#235	NYC-ALB	✓	✓	✓	✓	✓	✓	✓
#283	NYC-NFL	✓	✓	✓	✓	✓	✓	✓
#237	NYC-SAR	✓	✓	✓	✓	✓	✓	✓
#285	NYC-NFL	✓	✓	✓	✓	✓	✓	✓
#49	NYC-Chicago	✓	✓	✓	✓	✓	✓	✓
#291	NYC-Rutland	✓	✓	✓	✓	✓	✓	✓
#287	NYC-NFL	✓	✓	✓	✓	✓	✓	✓
#239	NYC-SAR	✓	✓	✓	✓	✓	✓	✓
#275	NYC-SYR	✓	✓	✓	✓	✓	✓	✓
#241	NYC-ALB	✓	✓	✓	✓	✓	✓	✓
#243	NYC-ALB	✓	✓	✓	✓	✓	✓	✓
#245	NYC-ALB	✓	✓	✓	✓	✓	✓	✓

On the Empire Corridor, the crew couplets are organized as shown in Exhibit 6-12 into five patterns, and are listed in Exhibit 6-13:

- Hudson Valley (Albany-Rensselaer to New York City)
- Ethan Allen Express (Albany-Rensselaer to Rutland, Vermont and Return)

- Adirondack (Albany-Rensselaer to Montreal, Quebec, and Return)
- Empire Corridor West (Albany-Rensselaer to Niagara Falls, NY or Ontario and Return)
- Lake Shore Limited (Albany-Rensselaer to Buffalo-Depew and Return)

Exhibit 6-12 Crew Couplet Districts



In the future, further crew efficiencies may be able to be gained by reexamining the initial terminal for some of the Empire Corridor West T&E crews by expanding the Buffalo/Niagara Falls crew start location.²³

6.6.5 Terminal, Yard and Support Operations

Equipment disposition programs are included for Empire Corridor Terminals and Yards. New trains are shown in **BLUE BOLD**, Exhibits 6-14 and 6-15.²⁴

²³ As more trains operate to/from Niagara Falls, it will be necessary to have spare or relief T/E personnel at that location. Currently the main location for T/E crew extra lists is at Albany-Rensselaer. The length of the run from Albany-Rensselaer to Niagara Falls requires that relief crews be available at Niagara to comply with Hours of Service rules. It is not practicable nor do the Union Collective Bargaining agreements allow for shifting employees randomly; they must be permanently assigned to one location or the other.

²⁴ "EQ" in Exhibits 6-14 and 6-15 means "equipment" (locomotives and coaches).

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Exhibit 6-13 Crew Couplets

Empire Corridor South; Hudson Valley (Albany-Rensselaer to New York City)									
On-Duty Location	On-Duty Time	Outbound Train	Departure Time	Arrival Time	Return Train	Return Trip Location	Departure Time	Arrival Time	Off-Duty Time
NYC		Crew from #64 previous day			#231	NYC		6:15-AM	8:30-AM
NYC		Crew from #246 previous day			#63	NYC		7:15-AM	9:30-AM
NYC		Crew from #272 previous day			#69	NYC		8:15-AM	10:30-AM
ALB	4:20-AM	#230	5:00-AM	7:10-AM	#273	NYC	9:00-AM	11:00-AM	11:25-AM
ALB	5:20-AM	#232	6:00-AM	8:10-AM	#233	NYC	10:00-AM	12:15-PM	12:40-PM
ALB	6:20-AM	#234	7:00-AM	9:00-AM	#281	NYC	11:00-AM	1:15-PM	1:40-PM
ALB	6:50-AM	#236	7:30-AM	9:40-AM	#235	NYC	12:00-PM	2:15-PM	2:40-PM
ALB	7:20-AM	#270	8:00-AM	10:15-AM	#283	NYC	1:00-PM	3:00-PM	3:25-PM
ALB	8:20-AM	#238	9:00-AM	11:15-AM	#237	NYC	2:00-PM	4:15-PM	4:40-PM
ALB	9:20-AM	#280	10:00-AM	12:15-PM	#285	NYC	3:00-PM	5:15-PM	5:40-PM
ALB	10:20-AM	DH	11:00-AM	1:15-PM	#49	NYC	3:45-PM	6:00-PM	6:25-PM
ALB	10:20-AM	#290	11:00-AM	1:15-PM	#291	NYC	4:30-PM	6:45-PM	7:10-PM
ALB	11:20-AM	#282	12:00-PM	2:15-PM	#287	NYC	5:00-PM	7:15-PM	7:40-PM
ALB	12:20-PM	#242	1:00-PM	3:15-PM	#239	NYC	5:30-PM	7:45-PM	8:10-PM
ALB	1:20-PM	#284	2:00-PM	4:00-PM	#275	NYC	6:00-PM	8:15-PM	8:40-PM
ALB	2:20-PM	#244	3:00-PM	5:15-PM	#241	NYC	7:00-PM	9:15-PM	9:40-PM
ALB	2:50-PM	#48	3:30-PM	5:45-PM	DH	NYC	7:00-PM	10:15-PM	10:40-PM
ALB	3:20-PM	#286	4:00-PM	6:15-PM	#243	NYC	9:00-PM	11:15-PM	11:40-PM
ALB	4:20-PM	#68	5:00-PM	7:15-PM	#245	NYC	11:00-PM	1:15-AM	1:40-AM
ALB	5:20-PM	#64	6:00-PM	8:15-PM	Crew for #231 next day				8:40-PM
ALB	6:20-PM	#246	7:00-PM	9:15-PM	Crew for #63 next day				9:40-PM
ALB	7:20-PM	#272	8:00-PM	10:15-PM	Crew for #69 next day				10:40-PM

Empire Corridor West; (Niagara Falls)									
On Duty Location	On Duty Time	Outbound Train	Departure Time	Arrival Time	Return Train	Return Trip Location	Departure Time	Arrival Time	Off Duty Time
ALB	5:30 AM	#271	6:30 AM	11:41 AM		Crew for #280 next day			12:41 PM
ALB	8:45 AM	#63	9:45 AM	3:05 PM		Crew for #282 next day			4:05 PM
ALB	12:30 PM	#281	1:30 PM	6:41 PM 6:36?		Crew for #284 next day			7:41 PM
ALB	2:15 PM	#283	3:15 PM	8:20 PM 8:21?		Crew for #286 next day			9:20 PM
ALB	4:30 PM	#285	5:30 PM	10:36 PM		Crew for #64 next day			11:36 AM
ALB	6:30 PM	#287	7:30 PM	12:36 AM		Crew for #272 next day			1:36 AM
NFL		Crew from #271 previous day			#280	NFL	3:40 AM	4:40 AM	10:10 AM
NFL		Crew from #63 previous day			#282	NFL	5:40 AM	6:40 AM	12:10 PM
NFL		Crew from #281 previous day			#284	NFL	7:40 AM	8:40 AM	2:10 PM
NFL		Crew from #283 previous day			#286	NFL	9:40 AM	10:40 AM	4:10 PM
NFL		Crew from #285 previous day			#64	NFL	11:40 AM	12:40 PM	6:10 PM
NFL		Crew from #287 previous day			#272	NFL	2:40 PM	3:40 PM	9:10 PM

Empire Corridor West; (Syracuse)										
On Duty Location	On Duty Time	Outbound Train	Departure Time	Arrival Time	Return Train	Return Trip Location	On Duty Time	Departure Time	Arrival Time	Off Duty Time
<u>SYR</u>		Crew from #275 previous day			#270	<u>SYR</u>	4:40 AM	5:25 AM	7:45 AM	8:20 AM
ALB	10:15 AM	#273	11:15 AM	1:35 PM	#272	<u>SYR</u>	4:45 PM	5:25 PM	7:45 PM	9:10 PM
ALB	7:30 PM	#275	8:30 PM	10:50 PM	Crew for #270 next day					11:20 PM

Empire Corridor West; (Buffalo)										
On Duty Location	On Duty Time	Outbound Train	Departure Time	Arrival Time	Return Train	Return Trip Location	On Duty Time	Departure Time	Arrival Time	Off Duty Time
ALB	5:00 PM	#49	6:00 PM	10:45 PM		Crew for #48 next day				11:45 PM
BUF		Crew from #49 previous day			#48	BUF	9:25 AM	10:25 AM	2:45 PM	3:10 PM

Adirondack; (Montreal)										
On Duty Location	On Duty Time	Outbound Train	Departure Time	Arrival Time	Return Train	Return Trip Location	On Duty Time	Departure Time	Arrival Time	Off Duty Time
ALB	9:45 AM	#69	10:45 AM	5:00 PM		Crew for #68 next day				7:00 PM
MTR		Crew from #69 previous day			#68	MTR	8:50 AM	10:50 AM	4:45 PM	5:10 PM

Ethan Allen Express; (Rutland)										
On Duty Location	On Duty Time	Outbound Train	Departure Time	Arrival Time	Return Train	Return Trip Location	On Duty Time	Departure Time	Arrival Time	Off Duty Time
ALB	6:00 PM	#291	7:00 PM	9:15 PM		Crew for #290 next day				10:15 PM
RUD		Crew from #291 previous day			#290	RUD	7:50 AM	8:30 AM	10:45 AM	11:10 AM

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Exhibit 6-14 Equipment Disposition at Yards—New York City

New York City						
Remarks	Train #	Arriving Time	Disposition	Departing Time	Train #	Remarks
	<i>from Yard</i>		Start	6:15 AM	#231	...
...	#230	7:10 AM	EQ' to #273	...	...	...
	<i>from Yard</i>		Start	7:15 AM	#63	...
...	#232	8:10 AM	EQ' to #233	...	...	...
	<i>from Yard</i>		Start	8:15 AM	#69	...
...	#234	9:00 AM	EQ' to #281	...	...	...
...	...	...	Turn from #230	9:00 AM	#273	...
...	#236	9:45 AM	EQ' to #235	...	...	...
...	...	...	Turn from #232	10:00 AM	#233	...
...	#270	10:15 AM	EQ' to #283	...	...	...
...	...	...	Turn from #234	11:00 AM	#281	...
...	#238	11:15 AM	EQ' to #237	...	...	...
...	...	...	Turn from #236	12:00 PM	#235	...
...	#280	12:15 PM	EQ' to #285	...	...	...
...	...	...	Turn from #270	1:00 PM	#283	...
...	#290	1:15 PM	EQ' to #291	...	...	...
...	...	...	Turn from #238	2:00 PM	#237	...
...	#282	2:15 PM	EQ' to #287	...	...	...
...	...	...	Turn from #280	3:00 PM	#285	...
...	#242	3:15 PM	EQ' to #239	...	...	...
	<i>from Yard</i>		Start	3:45 PM	#49	...
...	#284	4:00 PM	EQ' to #275	...	...	...
...	...	...	Turn from #290	4:30 PM	#291	...
...	#244	5:15 PM	EQ' to #241	...	...	...
...	...	...	Turn from #282	5:00 PM	#287	...
...	#48	5:45 PM	Terminates	<i>to Yard</i>		
...	...	...	Turn from #242	5:30 PM	#239	...
...	#286	6:15 PM	EQ' to #243	...	...	...
...	...	...	Turn from #284	6:00 PM	#275	...
...	#68	7:15 PM	Terminates	<i>to Yard</i>		
...	...	...	Turn from #244	7:00 PM	#241	...
...	#64	8:15 PM	Terminates	<i>to Yard</i>		
...	...	...	Turn from #286	9:00 PM	#243	...
...	#246	9:15 PM	EQ' to #245	...	...	...
...	#272	10:15 PM	Terminates	<i>to Yard</i>		
...	...	...	Turn from #246	11:00 PM	#245	...
	#271				#274	

Exhibit 6-15 Equipment Disposition at Yards—Niagara Falls and Syracuse

Niagara Falls

Remarks	Train #	Arriving Time	Disposition	Departing Time	Train #	Remarks
		from Yard	Start	4:40 AM	#280	
		from Yard	Start	6:40 AM	#282	
		from Yard	Start	8:40 AM	#284	
		from Yard	Start	10:40 AM	#286	
	#271	11:51 AM	EQ to #274			
			Thru	12:40 PM	#64	
	#63	2:51 PM	Thru			
			From #271	3:40 PM	#274	
	#281	6:36 PM	Terminates	to Yard		
	#283	8:21 PM	Terminates	to Yard		
	#285	10:36 PM	Terminates	to Yard		
	#287	12:36 AM	Terminates	to Yard		

Syracuse

Remarks	Train #	Westbound Train Time	Disposition	Eastbound Train Time	Train #	Remarks
		from Yard	Start	5:25 AM	#270	
			Thru	7:25 AM	#280	from Niagara Falls
from Albany	#271	8:50 AM	Thru			
			Thru	9:25 AM	#282	from Niagara Falls
			Thru	11:25 AM	#284	from Niagara Falls
from New York City	#63	12:05 PM	Thru			
			Thru	12:25 PM	#48	from Chicago
			Thru	1:25 PM	#286	from Niagara Falls
from New York City	#273	1:35 PM	EQ' to #272			
			Thru	3:25 PM	#64	from Toronto
from New York City	#281	3:50 PM	Thru			
			From #273	5:25 PM	#272	
from New York City	#283	5:30 PM	Thru			
from New York City	#285	7:50 PM	Thru			
from New York City	#49	8:45 PM	Thru			
from New York City	#287	9:50 PM	Thru			
from New York City	#275	10:50 PM	Thru	to Yard		

6.7 Stations

In recent years, NYSDOT has had an active improvement program upgrading, modernizing, and replacing passenger stations along the Empire Corridor. A summary of station improvements is included on the following Exhibits 6-16 and 6-17.

Exhibit 6-16 Empire Corridor West – Station Improvements

Empire Corridor West	
City	Status
Amsterdam	Station relocation to the central business district and modernization study is underway sponsored by NYSDOT.
Utica	Constructed westbound platform with improvements to station parking.
Rome	Completed improvements to provide better access to station platforms.
Syracuse	Constructed Intermodal Facility and NYSDOT is currently supporting an analysis to reduce congestion for freight and rail passenger service in the Syracuse Terminal area of the CSXT – Syracuse Terminal. Completed planning improvements for the station stop at the New York State Fairgrounds.
Rochester	Completion is nearing for a new station building with a high-level center platform, and an expanded facility for passenger train operations.
Buffalo–Depew	NYSDOT completed parking and other passenger amenities improvements.
Buffalo–Exchange Street	NYSDOT is working with the City of Buffalo and other stakeholders to plan a new station that will provide better connections to the local transit system and support downtown economic growth.
Niagara Falls, NY	Completed a new intermodal facility that provides the International crossing staffed by the Department of Homeland Security. This allows significant reduction in the schedule time for trains crossing the border from Canada, improving both overall run times and service reliability.

Exhibit 6-17 Empire Corridor South – Station Improvements

Empire Corridor South (Hudson Valley / Empire Capital District Connection)	
City	Status
Saratoga Springs	NYSDOT remodeled the station in 2004.
Schenectady	NYSDOT sponsored construction of a new station is underway with completion expected in 2018.
Albany–Rensselaer	NYSDOT recently completed: <ul style="list-style-type: none"> • Installation of a fourth station track • Platforms lengthened to accommodate 10 car trains
Hudson	High-level platforms and accessibility improvements will be part of the Empire Capital District Connection program.
Rhinecliff	High-level platforms and accessibility improvements will be part of the Empire Capital District Connection program.
Poughkeepsie	MNR modernized and restored the station.
Croton–Harmon	MNR modernized the station.
Yonkers	MNR modernized the station.
New York City	The “Moynihan Station” project, currently underway, is supported by NYSDOT and other stakeholders, to transform the former Farley Post Office Building on 8th Avenue. It will provide a new entrance and passenger amenities and increases station capacity for both intercity and commuter trains.

6.7.1 Station and Access Analysis

The following section includes a summary of the accessibility features included at each of the Empire Corridor West and South stations, Exhibits 6-18 and 6-19.

Exhibit 6-18 Empire Corridor West – Station Access

Empire Corridor West	
City	Access
Amsterdam	Low Level Platform with Wheelchair Lift is available.
Utica	2 - Low Level Platforms with Wheelchair Lifts are available for east and westbound tracks.
Rome	Center Island Low Level Platform with Wheelchair Lifts are available for both tracks, with elevator access to the platform.
Syracuse	High level platform with completely barrier free access for Americans with Disabilities Act (ADA) accessibility.
Rochester	New station will feature center-island platform that will provide for a barrier-free ADA accessible facility.
Buffalo–Depew	The station currently has a low-level platform with wheelchair lift available, and a station parking area has been designated with parking spaces for drivers with “handicap” placards and ramps from the parking area to station boarding platforms.
Buffalo–Exchange Street	Station currently has a low-level platform with Wheelchair Lift available.
Niagara Falls, NY	New station features a barrier-free high-level platform providing an ADA-accessible facility.

Exhibit 6-19 Empire Corridor South – Station Access

Empire Corridor South (Hudson Valley / Empire Capital District Connection)	
City	Access
Saratoga Springs	Low Level Platform with Wheelchair Lift is available.
Schenectady	There will be a new low level platform with two platform edges. A wheelchair lift is available. The new platform will also have a redundant egress.
Albany–Rensselaer	High-Level platforms accommodating all tracks with elevators in station completely barrier free for ADA accessibility.
Hudson	Low-Level Platform with Wheelchair Lift is available.
Rhinecliff	Low-Level Platform with Wheelchair Lift is available.
Poughkeepsie	High-Level platforms accommodating all tracks and a station that is completely barrier free for ADA accessibility.
Croton–Harmon	High-Level platforms accommodating all tracks and a station that is completely barrier free for ADA accessibility.
Yonkers	High-Level Platforms accommodating all tracks and a station that is completely barrier free for ADA accessibility.
New York City	High-Level platforms accommodating all tracks and a station that is completely barrier free for ADA accessibility.

6.7.2 Station Location Analysis

Station locations and parking facilities are provided in Exhibits 6-20 and 6-21.

Exhibit 6-20 Empire Corridor West – Station Location

Empire Corridor West		
City	Address	Parking
Amsterdam	466 West Main Street Route 5 West Amsterdam, NY 12010	3 Short Term Parking Spaces 13 Long Term Parking Spaces
Utica	321 Main Street Boehlert Transportation Center Utica, NY 13501	200 Long Term Parking Spaces
Rome	6599 Martin Street Rome, NY 13440	5 Long Term Parking Spaces
Syracuse	1 Walsh Circle Regional Transportation Center Syracuse, NY 13208	266 Long Term Parking Spaces
Rochester	320 Central Avenue Rochester, NY 14605	40 Long Term Parking Spaces
Buffalo–Depew	55 Dick Road Depew, NY 14043	40 Short Term Parking Spaces 40 Long Term Parking Spaces
Buffalo–Exchange Street	75 Exchange Street Buffalo, NY 14203	10 Short Term Parking Spaces 10 Long Term Parking Spaces
Niagara Falls, NY	825 Depot Avenue West Niagara Falls, NY 14305	30 Short Term Parking Spaces 30 Long Term Parking Spaces

Exhibit 6-21 Empire Corridor South – Station Location

Empire Corridor South (Hudson Valley / Empire Capital District Connection)		
City	Address	Parking
Saratoga Springs	26 Station Lane Saratoga Springs, NY 12866	40 Short Term Parking Spaces 40 Long Term Parking Spaces
Schenectady	332 Erie Boulevard Schenectady, NY 12305	Currently No Short Term Parking Spaces 20 Long Term Parking Spaces ²⁵
Albany–Rensselaer	525 East Street Rensselaer, NY 12144	500 Short Term Parking Spaces 500 Long Term Parking Spaces
Hudson	69 South Front Street Hudson, NY 12534	35 Short Term Parking Spaces 150 Long Term Parking Spaces
Rhinecliff	455 Rhinecliff Road Rhinecliff, NY 12574	42 Short Term Parking Spaces 141 Long Term Parking Spaces
Poughkeepsie	41 Main Street Metro-North Station Poughkeepsie, NY 12601	10 Short Term Parking Spaces 50 Long Term Parking Spaces
Croton–Harmon	4 Veteran's Plaza and 1 Croton Point Avenue Croton-on-Hudson, NY 10520	1,903 Short Term Parking Spaces 600 Long Term Parking Spaces
Yonkers	5 Buena Vista Avenue Metro-North Station Yonkers, NY 10701	250 Long Term Parking Spaces
New York City	8th Avenue and West 31st Street Pennsylvania Station New York, NY 10001	Privately operated parking garages available near station on 31 st Street

²⁵ Station currently under construction; final parking values still to be determined.

6.7.3 Station Operations

Station operational conditions and ownership characteristics are provided in Exhibits 6-22 and 6-23.

Exhibit 6-22 Empire Corridor West – Station Operations

Empire Corridor West		
City	Staff	Remarks
Amsterdam	Caretaker	Study currently underway to relocate the station closer to central business district.
Utica	Staffed	Facility Ownership: County of Oneida Parking Lot Ownership: County of Oneida
Rome	Unstaffed	Owned by the City of Rome.
Syracuse	Staffed	Facility Ownership: Intermodal Transportation Center, Inc. Parking Lot Ownership: Intermodal Transportation Center, Inc. (Central New York Transportation Authority–CENTRO)
Rochester	Staffed	Currently being replaced with new facility to open in 2017.
Buffalo–Depew	Staffed	Facility Ownership: State of New York Parking Lot Ownership: State of New York
Buffalo–Exchange Street	Staffed	Facility Ownership: City of Buffalo Parking Lot Ownership: City of Buffalo
Niagara Falls, NY	Staffed	Facility Ownership: City of Niagara Falls Parking Lot Ownership: City of Niagara Falls

Exhibit 6-23 Empire Corridor South– Station Operations

Empire Corridor South (Hudson Valley / Empire Capital District Connection)		
City	Staff	Remarks
Saratoga Springs	Staffed	Facility Ownership: Canadian Pacific Railway Parking Lot Ownership: Canadian Pacific Railway
Schenectady	Staffed	NYSDOT is currently building a new facility.
Albany–Rensselaer	Staffed	Facility Ownership: Capital District Transportation Authority Parking Lot Ownership: Capital District Transportation Authority
Hudson	Staffed	Facility Ownership: National Railroad Passenger Corporation Parking Lot Ownership: Amtrak, City of Hudson
Rhinecliff	Staffed	Facility Ownership: Dutchess County Parking Lot Ownership: Dutchess County/CSXT
Poughkeepsie	Staffed	Station Operated by: Metro-North MNR Facility Ownership: Metro-North MNR Parking Lot Ownership: Metro-North MNR
Croton–Harmon	Staffed	Station Operated by: Metro-North MNR Facility Ownership: Metro-North MNR Parking Lot Ownership: Metro-North MNR
Yonkers	Staffed	Station Operated by: Metro-North MNR Facility Ownership: Metro-North MNR Parking Lot Ownership: Metro-North MNR
New York City	Staffed	Facility Ownership: National Railroad Passenger Corporation

6.7.4 Intermodal Connectivity

The current intermodal connectivity options found at each station are listed in Exhibits 6-24 and 6-25.

Exhibit 6-24 Empire Corridor West – Intermodal Connections

Empire Corridor West	
City	Remarks
Amsterdam	Local Bus Connections provided by: City of Amsterdam Transit System
Utica	Local Bus Connections provided by: Utica – CENTRO (Central New York Regional Transportation Authority) Station served by: Adirondack Scenic Railroad, Greyhound, Adirondack Trailways, Birnie Bus Service
Rome	Local Bus Connections provided by: Rome - Oneida – CENTRO (Central New York Regional Transportation Authority)
Syracuse	Local Bus Connections provided by: CENTRO (Central New York Regional Transportation Authority) Station served by: Greyhound, New York Trailways
Rochester	Local Bus Connections provided by: RTS - Regional Transit Services The Rochester-Genesee Regional Transportation Authority (RGRTA)
Buffalo–Depew	Local Bus Connections provided by: NFTA - METRO Niagara Frontier Transportation Authority (NFTA)
Buffalo–Exchange Street	Local Bus Connections provided by: NFTA - METRO Niagara Frontier Transportation Authority (NFTA)
Niagara Falls, NY	Local Bus Connections provided by: NFTA - METRO Niagara Frontier Transportation Authority (NFTA)

Exhibit 6-25 Empire Corridor South – Intermodal Connections

Empire Corridor South (Hudson Valley / Empire Capital District Connection)	
City	Remarks
Saratoga Springs	Local Bus Connections provided by: Capital District Transportation Authority
Schenectady	Local Bus Connections provided by: Capital District Transportation Authority
Albany - Rensselaer	Local Bus Connections provided by: Capital District Transportation Authority
Hudson	Local Bus Connections provided by: Columbia County Public Transit
Rhinecliff	Taxi service available at station
Poughkeepsie	Local Bus Connections provided by: Dutchess County Public Transit (Division of Public Transit)
Croton-Harmon	Local Bus Connections provided by: Westchester Transportation County; Bee-Line Bus
Yonkers	Local Bus Connections provided by: Westchester Transportation County; Bee-Line Bus
New York City	Multiple Routes and Services Operated by Amtrak NJ Transit, MTA New York City Transit

6.8 Operating Results

Monitoring the operational performance of the service will focus on:

- On Time Performance
- Customer Satisfaction
- Financial Results
- Cost Recovery
- Operating Statistics
- Safety

- Market Share

The performance measurements will be part of a continuing process of identifying trends and determining actions that may need to be taken to ensure that the service is meeting the program goals.

6.8.1 On Time Performance

For many passengers, On Time Performance is the basis for measuring the entire trip experience. On Time Performance will be analyzed by both the performance across:

- All Trains Operating on the Route
- Individual Trains

The monitoring system will employ a matrix by which to analyze location and causes of delay:

- Railroads Providing Trackage and Dispatching
- Full Route
- Segment
- Types of Delays

6.8.2 Customer Satisfaction

Measures of customer satisfaction will employ a yardstick based on performance and surveys. The process will result in the creation of a Customer Service Index (CSI). Program managers will routinely cross reference the intangible and tangible attributes of the service to measure customer perception and value of the service. A Customer Comment Matrix will be used to record customer comments as to service quality; these will be applied to the CSI and measured against ridership to determine if service/performance is affecting ridership and to address significant weaknesses. The program management team will also undertake routine Service Standard Audits to compare service delivery against standards in particular performance areas and to gauge whether improvements are warranted.

6.8.3 Financial Results

Financial results will be tracked using two metrics:

- Cost Recovery
 - Revenue
 - Analyzing Fixed, Incremental and Variable Costs
 - Profit / Loss statement

- Operating Statistics (Costs and Revenues)
 - Ridership (Seat Miles Created and Utilized, Load Factor, Passenger Miles, Trip Length, Seat Turnover)
 - Mechanical Integrity (Equipment Availability, Mean Time Between Failures, Failure Analysis)
 - Train Operation (Train Miles, Locomotive Miles, Coach Miles, Matrix against Operating Segment)

6.8.4 Safety

The program team will develop an assessment process for safety focusing on:

- Employees – days without injuries; injury/train-mile
- Passengers – injuries/train-mile
- Trespassers – non-fatal injuries; fatal injuries; causes of injury

The process will apply the results to create a process of continual improvement.

6.8.5 Market Share

An annual assessment of market position based on regional and corridor data will help program managers determine further actions to improve service and attract riders. This process will require monitoring of other transportation modes to recognize changes to:

- Service Frequency and Amenity
- Schedules, Speed, Trip Times, and Fares/Costs
- New Initiatives – Capacity Improvements

7.0 PRIORITIZED CAPITAL PROGRAM OF PROJECTS – IMPLEMENTATION STRATEGY

The High Speed Rail Empire Corridor Program will build on recent and current projects sponsored by NYSDOT. Infrastructure improvements to date have included new stations, upgraded tracks and expanded capacity along the route from New York City to Niagara Falls. In the future, the capital program will focus on improvements that are coupled to increases in service frequency, shorter trip times, and increased operating capacity. By prioritizing projects to maximize benefits to operations, the program will advance towards its objectives in the most direct manner, driving public support for further investments as the benefits of the improvements are experienced by travelers.

The program implementation strategy has thus been designed to optimize the relationship between funding/spending and accrued benefits. Investments are sequenced to give the greatest travel time and operational benefits in the earliest phases, while ensuring minimum interference with live freight and passenger operations. The program has a 25-year life-span primarily to align with anticipated funding; based on past recent history and anticipated funding programs, it is expected that an annual program of \$250 million is affordable and manageable in the context of existing and anticipated future freight and passenger operations.²⁶ The program will need to be reassessed periodically, as each phase of work is completed, metrics are assessed, and future operating constraints are better known (level of freight traffic, evolving safety requirements, evolving travel demands).

The overall program is estimated to cost \$7.323 billion (2017 dollars). Although the Tier 1 Final EIS for this program indicates a capital cost over 20 years of just under \$6 billion, as this program was developed in more detail for this SDP, it was realized that the most efficient approach to rail infrastructure upgrades on an increasingly heavily used operating line is to visit each repair location once, and to upgrade to a state of good repair all elements at that location, even if they are not directly related to program objectives. Thus, if the program seeks the realignment and upgrade of a single track over a three-track bridge, it makes sense for both reasons of efficiency and reasons of collateral benefit to the service to upgrade the other two tracks as well. This avoids the need to return sometime later to address the other two tracks and, more importantly, leaves CSXT as the operator with greater flexibility to dispatch freight and passenger trains such that the passenger trains can still operate at the allowable speed, regardless to which track they are assigned. This improved dispatch and operational flexibility gives much greater likelihood of consistent, reliable, High Speed passenger service regardless of the freight traffic running in parallel. This decision increases the program cost, by bringing the entire freight/passenger network up to higher speed track standards.

The following sections detail the specific waves of program improvements, their cost, and the reason for the sequence of projects.

7.1 Capital Program - State of Good Repair

In recent years, NYSDOT has sponsored a series of infrastructure improvements along the Empire Corridor, outlined in Exhibit 7-1. These improvements constitute the Base condition and

²⁶ Projects are selected based on maximum passenger benefit and by geographic segment to minimize the impact of construction on railroad operations. This produces slight fluctuations in total annual costs around the \$250m annual target.

set the stage for significant additional ridership growth as Alternative 90B projects are implemented in coming years.

Exhibit 7-1 Recent Projects Sponsored by New York State – Department of Transportation

Project Name (Milepost)	ARRA Grant Application	Project Description	Project Status
ES-1	Highway-Rail Grade Crossings Safety Improvements CSXT Hudson Line (MP 75.8 to 140)	Design and install grade crossing active warning device, roadway approach and/or pedestrian improvements to accommodate improved passenger rail operations between Poughkeepsie and Albany-Rensselaer.	Completed
ES-3	Hudson Subdivision Signal Reliability (MP 75.8 to 140)	Replace old signal poles (for electric power to signals and communication lines) with underground cable between Poughkeepsie and Rensselaer Station.	Completed
ES-9	Albany-Rensselaer Station Fourth Track Capacity Improvements (MP 141 to 143)	Add a fourth track and extend platform to increase station capacity, operating speeds, train frequency, and routing flexibility, and reduce delays.	Completed
ES-10	Albany-Schenectady Double Track (MP 143.2 to 160.3)	Design, construct and rehabilitate a second main track between the Rensselaer and Schenectady stations to increase capacity, eliminate a bottleneck, and improve operations along a congested single-track segment.	Completed
EW-01	Schenectady Station Renovation / Platform Improvements (MP 159.8)	Complete station reconstruction, ADA compliant platform and station access, viaduct repairs, and parking improvements.	Under Construction
EW-6	Syracuse Track Configuration and Signal Improvements (MP 287 to 291)	Upgrade existing third track to reduce congestion, delays and interference between passenger and freight trains.	Under Design
EW-19	Rochester Station Redevelopment / Operating Improvements (MP 368 to 373)	New station building with new high-level center island platforms, new tracks/siding/interlocking to improve train operation efficiency, reduce congestion and improve passenger safety.	Completed
EW-13	Niagara Falls Station – New Intermodal Transportation Center (MP QDN28.2)	New station with improved location in downtown Niagara Falls, for improved function, operation, connectivity, border security, and reduced delays.	Completed

7.2 Summary of Implementation Strategy

The **Preferred Alternative** aims to increase service frequency, speed, and reliability for intercity passenger trains, without interfering with freight rail operations. Projects are aligned with anticipated funding and are sequenced to minimize impacts of construction on daily operations while yielding the greatest ridership and operational benefits. Key milestones in implementing this program include:

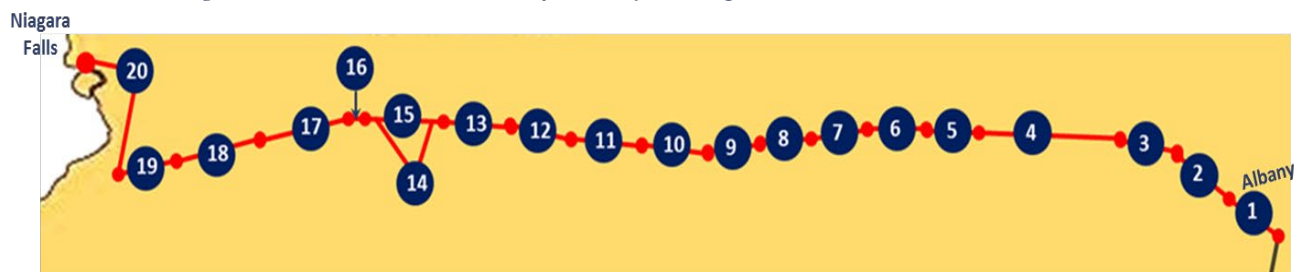
- Acquisition of new locomotives and passenger coaches

- Creation of additional capacity on the route through track, signal, and switch improvements
- Reconfiguration
- Increased train speeds and reduced trip times by flattening curves

The improvements intended for Empire Corridor South will be completed in the first five years of the twenty-five-year implementation schedule. These receive first priority in the program as they do not engage CSXT freight operations, and they address the largest ridership component on the Corridor. Empire Corridor South improvements also affect nearly two thirds of total Corridor travelers who travel between New York City and Albany and provide benefits to Empire Corridor West travelers who either originate in or are destined to Empire Corridor South stations. Finally, success on Empire Corridor South is expected to create support for continuing the program west of Albany in subsequent years.

Similar improvements for Empire Corridor West will be introduced gradually over the following twenty years on a priority basis keyed to ridership levels. Exhibit 7-2 illustrates the supporting infrastructure improvements intended for Empire Corridor West, organized into twenty segments. Each of the segments can be built independently, minimizing the impact on existing CSXT operations. As each segment is completed, Albany – Buffalo/Niagara Falls trip times and congestion will be reduced.

Exhibit 7-2 Empire Corridor and Distribution of Intercity Passenger Services



7.2.1 Summary of Service Growth

Additional trains would be added to the Empire Corridor schedule as outlined in Exhibit 7-3.

Exhibit 7-3 Additional Frequency Service Introduction Strategy

Year	Service Improvement	Train Numbers	Frequency	Trip Count Roundtrips	
				NYC / ALB	ALB / NFL
1				13	4
2				13	4
3	1 – New Round Trip Saratoga Springs – New York City 1-Round Trip (ext.) Albany-Rensselaer – Saratoga 1 New Round Trip Albany-Rensselaer- New York City	234 – 237 238 - 239 242 -235	Monday – Friday Monday – Friday Daily	15	4
4	1 – Round Trip Albany-Rensselaer – New York City	231 – 272	Daily	16	4
5	1 – Round Trip Albany-Rensselaer – New York City	236 - 273	Daily	17	4
6				17	4
7				17	4
8				17	4
9				17	4
10	1 – Round Trip Albany-Rensselaer – Niagara Falls	271 – 274 (A)	Monday - Friday	17	5
11				17	5
12				17	5
13	1 – Round Trip Albany-Rensselaer – Syracuse	273 – 272 (A)	Daily	17	6
14				17	6
15	1 – Round Trip Albany-Rensselaer – Niagara Falls	285 - 284	Daily	17	7
16				17	7
17				17	7
18	1 – Round Trip Albany-Rensselaer – Niagara Falls	287 – 286 (A)	Daily	17	8
19				17	8
20	1 – Round Trip Albany-Rensselaer – Syracuse	270 – 275	Daily	17	9

Note A: Trip will be extended from Syracuse to Niagara Falls in Year 25.

7.3 Short Term Capital Plan (0 – 5 years)

Years 1-5 focus on Empire Corridor South between New York City and Albany and are aimed at capacity and speed. These projects are anticipated to result in approximately a 15-minute savings in travel time between NYC and Albany, reducing a 150-minute trip to a scheduled 135-minute trip, and elevating average speeds from 64 mph to 70 mph over this segment. Starting the

program improvements between Albany-Rensselaer and New York City will provide benefits to large numbers of passengers who traverse both the Empire Capital District Connection (Empire Corridor South) and the Empire Gateway section (Empire Corridor West). Sections of the right-of-way now limited to 80 mph would be improved to permit 90 mph and 110 mph operation, and some track constraints would be removed to enable overtaking where current operations require following at slower speed. By reducing conflicts at compromised track locations, it is anticipated that these projects will improve on-time performance (OTP) from slightly below 80% to 85% of trains arriving on time. Approximately \$1.2 billion is programmed for the Empire Corridor South Year 1-5 improvements.

In addition to these speed and capacity infrastructure improvements, the first five years of the program will involve the addition of four round-trip trains (and a fifth additional one-way trip to Syracuse) to the Empire Corridor, with the additional train runs terminating further and further west as infrastructure improvements can be completed to support the extended operation. To enable the additional trains, approximately \$200 million worth of locomotives and coaches will be added to the fleet, sufficient to create six full train sets (five operating trains; one in for repairs and upkeep on a rotating, preventive maintenance cycle). Two trains will operate as limited-stop expresses, servicing certain stations to deliver a two-hour travel time between NYC and Albany.

The program implementation strategy for the first 5-year period is outlined in Exhibits 7-4 and 7-5.

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Exhibit 7-4 High Speed Rail Empire Corridor Program - Empire Capital Connection Improvements for Preferred Alternative: Years 1 - 5

Project Number	Project Area	Primary Project Type	Goals	Year 1 \$214	Year 2 \$257	Year 3 \$250	Year 4 \$255	Year 5 \$247	Estimated Project Cost (2017 \$ M)
ESC-04	Rhinecliff to Rensselaer	Rock Slope Stabilization	SAFETY <ul style="list-style-type: none">Reduce DelaysImprove Reliability	Start ESC-04	COMPLETE ESC-04				\$ 9
ESC-05	Staatsburg to Stuyvesant CP 82 – CP 99 – CP 136	Additional Interlocking's	RELIABILITY <ul style="list-style-type: none">Reduce DelaysSafetyIncrease Capacity		Start ESC-05	ESC-05 Continues	COMPLETE ESC-05		\$ 23
SC-14	Hudson Station	High Level Platform	RELIABILITY <ul style="list-style-type: none">Reduce Delays,Improve SafetyADA Improvement	Start ESC-14	COMPLETE ESC-14				\$ 42
ESC-51	Staatsburg to Jansenville MP 85 – MP 108	Hudson Line Bridge Replacement	TRIP TIME REDUCTION <ul style="list-style-type: none">CapacitySpeed ImprovementsState of Good Repair	Start ESC-51	ESC-51 Continues	COMPLETE ESC-51			\$ 30
ESC-47	New Signal System CP 75 – CP 169	Communications & Signals	TRIP TIME REDUCTION <ul style="list-style-type: none">CapacitySpeed ImprovementsSafety		Start ESC-47	ESC-47 Continues	COMPLETE ESC-47		\$ 47
ESC-20	Rhinecliff Station	High Level Platform	RELIABILITY <ul style="list-style-type: none">Reduce DelaysImprove SafetyADA Improvement		Start ESC-20	ESC-20 Continues	COMPLETE ESC-20		\$ 15
ESC-26	Poughkeepsie CP 72 – CP 75	Upgrade Track Speeds & Yard Improvements	TRIP TIME REDUCTION <ul style="list-style-type: none">Improve ReliabilityCapacity Improvements		Start ESC-26	ESC-26 Continues	COMPLETE ESC-26		\$ 15
ESC-35	CP 75 – CP 114	110 MPH Speed Improvement Project	TRIP TIME REDUCTION <ul style="list-style-type: none">Speed Improvements		Start ESC-35 & ESC-36	ESC-35 & ESC-36 Continues	COMPLETE ESC-35 & ESC-36		\$ 230
ESC-36	C P114 – CP 124								

Exhibit 7.4 (cont.) - High Speed Rail Empire Corridor Program - Empire Capital Connection Improvements for Preferred Alternative: Years 1 - 5

Project Number	Project Area	Primary Project Type	Goals	Year 1 \$214	Year 2 \$257	Year 3 \$250	Year 4 \$255	Year 5 \$247	Estimated Project Cost (2017 \$ M)
ESC-25	Hudson Highlands Metro North Railroad between Croton-Harmon and CP 75	3rd Track for Overtakes & Raise Operating Speeds	TRIP TIME REDUCTION <ul style="list-style-type: none">CapacitySpeed ImprovementsState of Good Repair			Start ESC-25	ESC-25 Continues	COMPLETE ESC-25	\$ 85
ESC-18	Metro North Railroad Tarrytown	Pocket Track CP 25 Additional 3rd Rail	RELIABILITY <ul style="list-style-type: none">Reduce DelaysSafetyIncrease Capacity	Start ESC-18	COMPLETE ESC-18				\$ 10
ESC-06	Stuyvesant CP 124 + CP 125	Third Track & Interlocking Improvements	RELIABILITY <ul style="list-style-type: none">Reduce Delays,Improve SafetyADA Improvement	Start ESC-14	COMPLETE ESC-14			COMPLETE ESC-14	\$ 47
ESC-15	Livingston Avenue Moveable Bridge	Replacement of Bridge	RELIABILITY <ul style="list-style-type: none">CapacitySafetyState of Good Repair	Start ESC-51	ESC-51 Continues	COMPLETE ESC-51			\$ 280
HSR-2	EMPIRE GATEWAY	Double Track Project Schenectady (CP 161 to CP 169)	TRIP TIME REDUCTION <ul style="list-style-type: none">CapacitySpeed ImprovementsSafety					Start HSR-2	\$ 200
HSR	Acquisition of additional locomotives and coaches to support service expansion	Equipment	SERVICE GROWTH <ul style="list-style-type: none">Increase CapacityImprove ReliabilityImprove Passenger Experience		Start Procurement of New Locomotives & Coaches	Procurement of New Locomotives & Coaches Continues	Procurement of New Locomotives & Coaches Continues	COMPLETED Procurement of New Locomotives & Coaches	\$ 200
								Total Investment Years 1 through 5	\$ 1,233 M

7.4 Mid Term Capital Plan (6 – 10 years)

Years 6-10 of the program focus on select bridge replacements, track and signal improvements between Albany and Niagara Falls. Approximately \$1.2 billion will be spent during this phase, or \$240 million annually. These improvements address speed and capacity and are distributed along the Empire Corridor West right-of-way to avoid a circumstance where overly concentrated construction activity in one area might interfere with freight or passenger services. The next phase of the work starts at Utica Station, as this will provide the most immediate operational flexibility and capacity increase for the system. With an expanded interlocking west of the station, the program enables increased platform and track capacity where it is most needed to accommodate planned train moves. The program will then continue expanding capacity to the east and west from Utica Station, focused on conflict-free meets (passing of one train by another) of east and westbound trains on separate or passing tracks. Beyond Utica Station, the Niagara Falls branch single track chokepoint is addressed to enable two-way operation that better accommodates the increased service resulting from Years 1-5 and saves significant time in the schedule (which cascades back through the entire Corridor including trains on Empire Corridor South). These projects will reduce Albany-Niagara Falls travel times by 10 minutes for all trains and significantly improve reliability, increasing on-time performance from 78% to 87%, reducing delays, and yielding more consistent and dependable service. As program improvements provide additional capacity to the west, the four trains added to the schedule in Years 1-5 would be extended to Rochester, then Buffalo/Depew, and, finally, to Niagara Falls. The program implementation strategy for Years 6 through 10 are outlined in Exhibit 7-5.

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Exhibit 7-5 High Speed Rail Empire Corridor Program - Empire Gateway Improvements for Preferred Alternative: Years 6 - 10

Project Number	Project Area	Primary Project Type	Goals	Year 6 \$260	Year 7 \$265	Year 8 \$265	Year 9 \$220	Year 10 \$255	Estimated Project Cost (2017 \$ M)
HSR-2	Capital District <i>New Trackage eliminates single track operation and rehabilitate Mohawk River Bridge</i>	Track & Signal Install 2nd Track from CP 161 (Schenectady) to CP 169 (Hoffman's)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reduction	COMPLETE Double Track \$160 m					\$160
HSR-3	Mohawk Valley <i>Adds trackage and increases operating speeds to support trip time reductions</i>	Track & Signal Add Main Tracks from CP 169 (Hoffman's) to CP 184 (Fonda)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reduction	Start Installation \$100 m	COMPLETE Installation \$135 m				\$235
HSR-6	Mohawk Valley <i>Adds trackage and increases operating speeds to support trip time reductions</i>	Track & Signal Additional Main Tracks from CP 226 (Herkimer) to CP 235 (Utica)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reduction					COMPLETE Installation of Track \$ 105 m	\$105
HSR-7	Utica Union Station <i>Improves operation of passenger trains and freight trains at Utica Union Station</i>	Track & Signal Add Main Tracks from CP 235 (Utica) to CP 239 (Oriskany)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityTrip Time reductionImprove Station Operations				COMPLETE Installation of Track \$120 m		\$120
HSR-8	Mohawk Valley <i>Adds trackage and increases operating speeds to support trip time reductions</i>	Track & Signal Add Main Tracks from CP 239 (Whitesboro) to CP 246 (Oriskany)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reduction			COMPLETE Installation of Track \$ 90 m			\$90
HSR-9	Mohawk Valley <i>Adds trackage and increases operating speeds to support trip time reductions</i>	Track & Signal Additional Main Tracks CP 246 (Oriskany) – CP 259 (Vernon)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reduction				Start Installation \$ 100 m	COMPLETE Installation \$ 120 m	\$220
HSR-16	Rochester Station <i>Improve interlocking to improve operation of freight and passenger trains west of Rochester Station</i>	Track & Signal Rebuild Interlocking at CP 373	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityTrip Time reductionImproves Station Operation					COMPLETE Rebuild Interlocking CP 373 \$ 30 m	\$ 30
HSR-20	Niagara Branch <i>Additional capacity eliminates single track operation</i>	Track & Signal North Tonawanda to CP 23	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reduction		Start Installation of Double Track & Eliminate Single Track Operation \$ 130 m	COMPLETE Installation of Double Track Eliminate Single Track Operation \$ 175 m			\$305
Total Investment Years 6 through 10									\$ 1,265 M

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7.5 Extended Term Capital Plan (11 years and beyond)

The program implementation strategy for Years 11 through 25 are outlined in Exhibits 7-6, 7-7, and 7-8. The subsequent program work is concentrated almost entirely on Empire Corridor West, and continues the effort to decongest the track system, relieve bottlenecks (in descending order of impact), speed train operations by smoothing curves, increase platform flexibility at stations through the addition of track interlockings, and upgrade elements of passengers' experience. These projects complete the program with additional track and signal system improvements to further speed train operations, reduce freight/passenger conflicts, improve reliability, and reduce delays. It remains essential to complete the entire program, since the failure to complete improvements on the Empire Corridor West segment would result in slower schedules that would cascade along both Empire Corridor West and Empire Corridor South operations, limiting the benefits of the earlier investments in these more heavily traveled Corridor segments.

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Exhibit 7-6 High Speed Rail Empire Corridor Program - Empire Gateway Improvements for Preferred Alternative: Years 11 - 15

Project Number	Project Area	Primary Project Type	Goals	Year 11 \$280	Year 12 \$280	Year 13 \$330	Year 14 \$330	Year 15 \$330	Estimated Project Cost (2017 \$ M)
HSR-5	Mohawk Valley <i>Adds trackage to allow passenger train faster operation with freight trains</i>	Track & Signal Additional Main Tracks CP 218 (Little Falls) – CP 226 (Herkimer)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reductionImproved Station Operations	Start Installation \$ 100 m	Continue Installation \$ 100 m	COMPLETE Installation \$ 50 m			\$ 250
HSR-10	Syracuse Terminal Subdivision <i>Increased Capacity that will support trip time reductions</i>	Track & Signal Additional Main Tracks CP 259 (Vernon) to CP 283 (East End of DeWitt Yard)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reduction	Start Installation \$ 100 m	Continue Installation \$ 100 m	Continue Installation of \$ 50 m	Continue Installation \$ 50 m	Continue Installation \$ 50 m	\$ 350
HSR-12	East of Seneca River Bridge <i>Adds trackage and increases operating speeds to support trip time reductions</i>	Track & Signal Additional Main Tracks CP 310 (Warner's) – CP 320 (east end of Seneca River)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reduction				Start Installation Increase operating speeds for trip time reduction \$ 160 m	COMPLETE Installation Increase operating speeds for trip time reduction \$ 100 m	\$ 260
HSR-14	Rochester “West Shore By-pass” <i>Routes freight trains away from downtown Rochester and Station area increasing capacity</i>	Track & Signal Additional Main Tracks “West Shore By-Pass” CP 347 (Waynesport) –CP 368 (Chili Jct.)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reductionImproved Station Operations					Start Installation \$ 180 m	\$ 180
HSR-17	Rochester Subdivision <i>Adds capacity to allow for better operation of freight and passenger trains east of Rochester Station</i>	Track & Signal Additional Main Tracks CP 374 – CP 388 in the Rochester area	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reductionImproved Station Operations	Start Installation \$ 80 m	Continue Installation \$ 80 m	COMPLETE Installation \$ 130 m			\$ 290
HSR-18	Rochester Subdivision <i>Adds trackage to increase operating speeds and support trip time reductions</i>	Track & Signal Additional Main Tracks CP 399 (Chili Jct.) – CP 409 (South Byron)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reductionImproved Station Operations				Start Installation Contribute to Trip Time Reduction \$ 100 m	COMPLETE Installation Contribute to Trip Time Reduction \$ 120 m	\$ 220
Total Investment Years 11 through 15									\$ 1,550 M

Exhibit 7-7 High Speed Rail Empire Corridor Program - Empire Gateway Improvements for Preferred Alternative: Years 16 – 20

Project Number	Project Area	Primary Project Type	Goals	Year 16 \$300	Year 17 \$300	Year 18 \$350	Year 19 \$350	Year 20 \$350	Estimated Project Cost (2017 \$ M)
HSR-4	Mohawk Valley <i>Adds trackage to allow passenger trains faster operation on the multiple curves along the Mohawk River</i>	Track & Signal Additional Main Tracks CP 184 (Fonda) to CP 217 (Little Falls)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reductions			Start Installation \$100 m	Continue Installation \$100 m	Continue Installation \$100 m	\$ 300
HSR-10	Syracuse Terminal Subdivision <i>Increased Capacity that will support trip time reductions</i>	Track & Signal Additional Main Tracks CP 259 (Vernon) to CP 283 (East End of DeWitt Yard) -	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reductions	Continue Installation Significant Trip Reduction \$ 50 m	COMPLETE Installation Significant Trip Reduction \$ 50 m				\$ 100
HSR-13	Seneca River Bridge <i>Eliminate 40 MPH Speed Restriction on Seneca River Bridge</i> <i>Significant Trip Reduction</i>	Track & Signal Additional Main Tracks CP 320 (Seneca River Bridge) to CP 359 (Palmyra)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reductions	Start Installation Replacement Seneca River Bridge Eliminate Speed Restriction \$ 150 m	Continue Installation Replacement Seneca River Bridge Eliminate Speed Restriction \$ 100 m	Continue Installation Replacement Seneca River Bridge Eliminate Speed Restriction \$ 100 m	Continue Installation Replacement Seneca River Bridge Eliminate Speed Restriction \$ 100 m	COMPLETE Installation Replacement Seneca River Bridge Eliminate Speed Restriction \$ 100 m	\$ 550
HSR-14	Rochester “West Shore By-pass” <i>Routes freight trains away from downtown Rochester and Station area increasing capacity</i>	Track & Signal Additional Main Tracks “West Shore By-Pass” CP 347 (Waynesport) –CP 368 (Chili Jct.)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reductions	COMPLETE Installation \$ 100 m					\$100
HSR-19	Buffalo Terminal & Rochester Subdivision <i>Increased Capacity that will support trip time reductions Significant Trip Time Reduction</i>	Track & Signal Additional Main Tracks CP 399 (South Byron) to CP 432 (East Buffalo)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reductions		Start Installation Significant Trip Time Reduction \$ 150 m	Continue Installation Significant Trip Time Reduction \$ 150 m	Continue Installation Significant Trip Time Reduction \$ 150 m	Continue Installation Significant Trip Time Reduction \$ 150 m	\$600
Total Investment Years 16 through 20									\$ 1,650 M

Exhibit 7-8 High Speed Rail Empire Corridor Program - Empire Gateway Improvements for Preferred Alternative: Year 21 - 25

Project Number	Project Area	Primary Project Type	Goals	Year 21 \$325	Year 22 \$375	Year 23 \$375	Year 24 \$325	Year 25 \$235	Estimated Project Cost (2017 M)
HSR-4	Mohawk Valley <i>Adds trackage to allow passenger trains faster operation on the multiple curves along the Mohawk River</i>	Track & Signal Additional Main Tracks in the Mohawk Valley CP 184 (Fonda) – CP 217 (Little Falls)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reductions	Continue Installation \$150 m	Continue Installation \$100 m	COMPLETE Installation \$100 m			\$350
HSR-11	Syracuse Terminal Subdivision <i>Provides passenger trains their own station tracks to eliminate interferences with freight trains</i>	Track & Signal Additional Main Tracks CP 283 (East Syracuse) to CP 310 (West Syracuse)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reductionImproved Station Operations		Start Installation \$ 125 m	Continue Installation \$ 125 m	Continue Installation \$ 175 m	COMPLETE Installation \$ 160 m	\$585
HSR-15	Rochester Subdivision <i>Adds track capacity and supports better passenger train operations at Rochester</i>	Track & Signal Additional Main Tracks to “Main Line” CP 374 (Rochester) – CP 388 (Chili Jct.)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reductionImproved Station Operations	Start Installation \$ 75 m	Continue Installation \$ 150 m	Continue Installation \$ 150 m	Continue Installation \$ 150 m	COMPLETE Installation \$ 75 m	\$600
HSR-19	Buffalo Terminal & Rochester Subdivision <i>Significant Trip Time Reduction</i>	Track & Signal Additional Main Tracks CP 399 (South Byron) to CP 432 (East Buffalo)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reductionImproved Station Operations	COMPLETE Installation \$ 100 m					\$100
Total Investment Years 21 through 25									\$ 1,635 M

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7.6 Staffing Plan for Supporting Service Growth

Based on the foregoing summaries of the program capacity improvement sequence over the 25-year implementation period and noting the introduction of expanded frequency of service in the first five years, crewing and staffing of rail operator forces to sustain the enhanced physical plant and additional train service is outlined in Exhibits 7-9 through 7-14. Additional trains are added in early program phases because ridership on the Empire Corridor between Albany and New York City is reaching saturation, and studies show that adding service to crowded transit services is necessary to maintain existing ridership while positioning the service to accommodate growth.

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Exhibit 7-9 High Speed Rail Empire Corridor Program - Empire Capital District Connection (New York City to Albany and Schenectady) – Staffing Plan

Train Service Improvements	Year 1 - 5	Year 6 – 10	Year 11 - 15	Year 16 – 20	Year 21 - 25	New Roundtrips
Trips Added	Round Trips Saratoga Springs / NYC Saratoga Springs / NYC Albany-Rensselaer / NYC Albany-Rensselaer / NYC	Round Trips Albany-Rensselaer / NFL	Round Trips Albany-Rensselaer / Syracuse Albany-Rensselaer / NFL	Round Trips Albany-Rensselaer / NFL Albany-Rensselaer / Syracuse	Round Trips Syracuse / NFL	ALB/NYC + 4
						ALB/NFL + 4 ALB/SYR + 1

Additional Infrastructure	Year 1 - 5	Year 6 – 10		Year 11 - 15	Year 16 – 20	Year 21 - 25	Total
Segment Completed	All Projects between NYC and Albany-Rensselaer COMPLETED	HSR-2 HSR-6 HSR-8 HSR-16	HSR-3 HSR-7 HSR-9 HSR-20	HSR-5 HSR-17 HSR-12 HSR-18	HSR-14 HSR-10 HSR-13	HSR-19 HSR-4 HSR-11 HSR-15	All Segments COMPLETED
New Miles of Track	48	97		105	45	109	404
Upgraded Interlockings	7	15		8	4	12	46
Grade Crossings		13		31	20	61	125
Bridges	12	8		5	8	21	54

Job Creation	Year 1 - 5	Year 6 – 10	Year 11 - 15	Year 16 – 20	Year 21 - 25	Total
Train Crews	16	3	8	8	5	40
Train Movement Management	5					5
Stations		2	3			5
Track		12	8	6	18	44
Signal		25	12	12	18	67
Structures	3			3	6	12
Total	24	42	31	29	47	173

Exhibit 7-10 High Speed Rail Empire Corridor Program - Empire Capital District Connection (New York City to Albany and Schenectady) – Staffing Plan

Train Service Improvements	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Trips Added			1 – New Round Trip Saratoga Springs - New York City 1-Round Trip (ext.) Albany-Rensselaer - Saratoga 1 New Round Trip Albany-Rensselaer - New York City	<u>New Round Trip:</u> New York City - Albany 231 - 272	<u>New Round Trip:</u> Albany-Rensselaer - New York City 236 - 273	

Additional Infrastructure	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Segment Completed						
New Miles of Track		1		3	44	48
Upgraded Interlockings				4	3	7
Grade Crossings						
Bridges			6	6		12

Job Creation	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Train Crews			6	5	5	16
Train Movement Management		2	2		1	5
Stations						
Track						
Signal						
Structures		3				3
Total		5	8	5	6	24

Exhibit 7-11 High Speed Rail Empire Corridor Program - Empire Gateway – Staffing Plan

Train Service Improvements	Year 6	Year 7	Year 8	Year 9	Year 10	Total
Trips Added					<u>New Round Trip:</u> Albany-Rensselaer - Niagara Falls 271 - 274	

Additional Infrastructure	Year 6	Year 7	Year 8	Year 9	Year 10	Total
Segments Completed	HSR-2	HSR-3	HSR-8 + HSR-20	HSR-7	HSR-6, HSR-9 + HSR-16	
New Miles of Track	12	10	19	8	48	97
Upgraded Interlockings	2	2	4	2	5	15
Grade Crossings	1	11	1	-	-	13
Bridges	1	1	4	-	2	8

Job Creation	Year 6	Year 7	Year 8	Year 9	Year 10	Total
Train Crews					3	3
Train Movement						
Stations					2	2
Track	6	3	3			12
Signal	3	3	6	3	10	25
Structures						
Total	9	6	9	3	15	42

Exhibit 7-12 High Speed Rail Empire Corridor Program - Empire Gateway – Staffing Plan

Train Service Improvements	Year 11	Year 12	Year 13	Year 14	Year 15	Total
Trips Added			<u>New Round Trip:</u> Albany-Rensselaer - Syracuse 273 - 272		<u>New Round Trip:</u> Albany-Rensselaer - Niagara Falls 285 - 284	

Additional Infrastructure	Year 11	Year 12	Year 13	Year 14	Year 15	Total
Segments Completed			HSR-5 + HSR-17		HSR-12 + HSR-18	
New Miles of Track			52		53	105
Upgraded Interlockings			4		4	8
Grade Crossings			17		14	31
Bridges			3		2	5

Job Creation	Year 11	Year 12	Year 13	Year 14	Year 15	Total
Train Crews			5		3	8
Train Movement						
Stations			2		1	3
Track			8			8
Signal			6		6	12
Structures						
Total			21		10	31

Exhibit 7-13 High Speed Rail Empire Corridor Program - Empire Gateway – Staffing Plan

Train Service Improvements	Year 16	Year 17	Year 18	Year 19	Year 20	Total
Trips Added			New Round Trip: Albany-Rensselaer - Niagara Falls 287 - 286		New Round Trip: Albany-Rensselaer - Niagara Falls 270 - 275	

Additional Infrastructure	Year 16	Year 17	Year 18	Year 19	Year 20	Total
Segments Completed	HSR-14	HSR-10			HSR-13	
New Miles of Track	21	24			39	45
Upgraded Interlockings	2	2			4	4
Grade Crossings	11	9			27	20
Bridges	4	1			3	8

Job Creation	Year 16	Year 17	Year 18	Year 19	Year 20	Total
Train Crews			3		5	8
Train Movement						
Stations						
Track	3	3				6
Signal	3	3			6	12
Structures		3				3
Total	6	9	3		11	29

Exhibit 7-14 High Speed Rail Empire Corridor Program - Empire Gateway – Staffing Plan

Train Service Improvements	Year 21	Year 22	Year 23	Year 24	Year 25	Total
Trips Added					New Round Trip: Syracuse - Niagara Falls 271 - 274	

Additional Infrastructure	Year 21	Year 22	Year 23	Year 24	Year 25	Total
Segments Completed	HSR-19		HSR-4		HSR-11 + HSR-15	
New Miles of Track	44		34		31	109
Upgraded Interlockings	4		4		4	12
Grade Crossings	22		36		3	61
Bridges	3		8		10	21

Job Creation	Year 21	Year 22	Year 23	Year 24	Year 25	Total
Train Crews					5	5
Train Movement						
Stations						
Track	6		6		6	18
Signal	6		6		6	18
Structures			3		3	6
Total	12		15		20	47

8.0 PROGRAM IMPLEMENTATION STRATEGY

The program implementation strategy has been designed to optimize the relationship between funding and accrued benefits. Investments are sequenced to give the greatest travel time and operational benefits in the earliest phases, while ensuring minimum interference with freight operations over the life of the program. The program has a 25-year life-span both to align with anticipated funding and to enable projects to be sequenced to avoid impacts to existing freight and passenger services. The latter stages of the program will need to be reassessed as early work is completed, metrics are assessed, and future operating constraints are better known (level of freight traffic, evolving safety requirements, evolving travel demands, etc.). This section of the SDP describes the administrative, financial, legal, and managerial infrastructure that must be in place to support program implementation.

8.1 Financial Plan – 10 years

Funding the initial 10-year program phase is limited to available Federal and State capital funding (plus the possibility of modest municipal investments for station-related improvements). An annual target of \$250 million has been established for the program to address anticipated rates of federal support and to ensure that infrastructure work is not undertaken at a level that might interfere with daily passenger and freight services.²⁷ Based on project schedules and the capacity of the existing rail network to tolerate track, signal and station work, it is expected that this level of investment would continue for the duration of the program, providing funding can be identified and programmed.

8.1.1 Revenue

By increasing speed, train frequency, and reliability, the program will draw riders to rail from other modes, primarily airlines, intercity bus, and automobiles. Travel demand forecasting conducted during the NEPA process indicated a potential shift of approximately one million new riders by 2035, increasing ridership from its current level of 1.6 million annual riders to 2.6 million annual riders.²⁸ While it is difficult to project fares over the implementation time frame, using current (2017) fares, 2035 revenues would be expected to increase from \$79 million to approximately \$143 million by 2035 due to increased ridership, an increase of \$64 million (2017 dollars).

8.1.2 Cost

The program operating and capital costs are discussed below. Operating and maintenance costs grow as program elements are implemented (both capital infrastructure improvements and additional train service). Capital costs of \$7.323 billion (2017 dollars) are spread over the entire 25-year implementation time frame for the program. Equipment costs amount to approximately \$200 million, with infrastructure improvements costing \$7.123 billion.

²⁷ Projects are selected based on maximum passenger benefit and by geographic segment to minimize the impact of construction on railroad operations. This produces slight fluctuations in total annual costs around the \$250 million annual target.

²⁸ This SDP recognizes additional travel time benefit of 4 minutes that was not considered in the Tier 1 EIS, resulting in a slightly larger ridership gain of 1.083 million new riders by 2040.

8.1.3 Train Operations

The program will increase total round train trips from four to eight between New York City and Buffalo/Depew-Niagara Falls. (One additional train will operate between Albany-Syracuse on a loop basis.) The total Train and Engine additional complement would be expected to be 40 personnel once all five trains have been added. This includes all service requirements and extra-list additional staffing.

8.1.4 Maintenance

Costs will increase due to the need for additional train crews and station, track and signal maintenance personnel associated with the improvements. By the time the program is completed in 2045, it is estimated that the additional trains and improved and expanded track and signal system will require approximately 141 additional train, station, and track/signal maintenance personnel above current allocations.

8.1.5 Total Operating and Maintenance Costs

Overall, including train crews and track/signal/station maintenance and operating personnel, the **Preferred Alternative** will add \$70 million to the base Empire Corridor operating cost of \$106 million (2017 dollars) by 2035. The annual Empire Corridor operating and maintenance costs would then total \$176 million.

8.1.6 Deficits

Including all infrastructure and train operations and infrastructure maintenance costs, implementation of the **Preferred Alternative** will result in an increase in the Empire Corridor deficit of about \$6 million, from \$27 million to \$33 million (2017 dollars).

8.2 Capital Cost

The program is structured to require approximately \$250 million annually for capital investment (Exhibit 8-1).²⁹ The first five years emphasize Capital Empire District (Empire Corridor South) infrastructure and additional train equipment, with the balance beyond Year 5 focused on the Empire Gateway (Empire Corridor West) Albany – Buffalo/Niagara Falls right-of-way. Capital costs are divided generally by type of improvement as shown in Exhibit 8-2.

²⁹ *The first year shows a reduced program value recognizing administrative planning and organization, and initial contractor mobilization, resulting in a lower spending level Year 1.*

Exhibit 8-1 Annual Apportionment of Total Program Capital Costs (Empire Capital District Connection and Empire Corridor Gateway)

Empire Corridor Capital Program Annual Budget			
Year	Empire Capital District Connection	Empire Gateway	Total Program
1	\$214		\$214
2	\$257		\$257
3	\$250		\$250
4	\$255		\$255
5	\$47	\$200	\$247
6		\$260	\$260
7		\$265	\$265
8		\$265	\$265
9		\$220	\$220
10		\$255	\$255
11		\$280	\$280
12		\$280	\$280
13		\$330	\$330
14		\$330	\$330
15		\$330	\$330
16		\$300	\$300
17		\$300	\$300
18		\$350	\$350
19		\$350	\$350
20		\$350	\$350
21		\$325	\$325
22		\$375	\$375
23		\$375	\$375
24		\$325	\$325
25		\$235	\$235
Total	\$1,023	\$6,300	\$7,323

Exhibit 8-2 Capital Costs by Category

Item	EC South (millions \$)	EC West (millions \$)	Total (millions \$)
Bridges	\$310		\$310
New Tracks/Passing Sidings	\$147		\$147
Curve Straightening	\$220		\$220
Signal System Upgrades	\$79		\$79
Rolling Stock	\$200		\$200
Station Upgrades	\$67		\$67
High Speed Rail Construction (track, signals, sidings)		\$6,300	\$6,300
Total	\$1,023	\$6,300	\$7,323

The program will cost about \$7.323 billion over 25 years (2017 dollars). About \$2.4 billion will be required in the first ten years, with the balance over the remaining fifteen years. Exhibits 7-4 - 7-8 show the allocation of costs across the 35 separate program initiatives that comprise the program, as well as year-by-year over the 25-year investment period.

Funding for the program is expected from ticket sales, lease and concession revenues, and federal and state grants. Operating costs will be funded from ticket sales and station concession lease revenues and state funds. Capital funds will be generated from federal (likely FRA) and state budgets via NYSDOT and appropriations, and some municipal contributions toward station or station area improvements. Under the Passenger Rail Investment and Improvement Act of 2008, states are obligated to share the capital costs of improvements and daily operating and maintenance costs of services provided by Amtrak over portions of the Northeast Corridor and its branches. For the Empire Corridor, NYSDOT will share both the capital and operating and maintenance costs of the program according to formulas based on shared benefits and intensity of use of the infrastructure by the parties.

8.3 Capital Program

NYSDOT maintains a State Rail Plan that is developed by NYSDOT and processed through the various Metropolitan Planning Organizations and Regional Transportation Districts (RTDs) that represent political jurisdictions through which the Empire Corridor passes. The NYSDOT program provides a framework for repair and expansion of the state's road and rail networks. Projects are incorporated into the program and then approved by the appropriate MPO to ensure eligibility for federal funding. Some projects are funded entirely with state funds, although most are funded with a mix of state and federal funds, matched with local municipal or RTD funds where appropriate.

8.4 Program Management Plan and Schedule

The program will be managed according to a Program Management Plan, incorporating a schedule by which the various program elements will be implemented and laying out the procedures by which the program will be implemented. The Plan will span program organization and staffing, procurement procedures, design procedures, federal and state compliance procedures, notification procedures, required agreements and permits, utility management plans, and all other facets of standard project management. The schedule will integrate CSXT, MNR and Amtrak daily train operating requirements, notification requirements, and ongoing system maintenance needs with program design, procurement, construction, and testing/commissioning requirements to ensure routine operations are unaffected by program activities. Individual projects will be sequenced to maintain all essential rail and local road and emergency response operations and to optimize construction and minimize costs for flagging, Force Account, local police/traffic/utility, and other support services. The Program Management Plan will be written and submitted upon approval of the first federal grant for the program.

8.5 Institutional Arrangements and Organizational Responsibilities

The Program Management Plan will identify the right-of-way and asset owners and other parties responsible for program implementation. Owners of right-of-way include Amtrak, MNR and CSXT. NYSDOT will serve as the Program Manager, with responsibility for securing all necessary agreements and NEPA findings for specific projects, coordinating with the owners for access to and occupation of the right-of-way, and scheduling and monitoring the conduct of the work at a high level. The individual projects will be constructed by the owners or contractors working under their supervision. Testing and commissioning will be performed by the owners and Amtrak. NYSDOT will serve as the recipient of federal funding and will maintain program budgets.

8.6 Stakeholder Agreements

8.6.1 Program Sponsor Agreements

NYSDOT is the sole program sponsor. However, NYSDOT will require support from – and will need to coordinate with – MNR, Amtrak, and CSXT. How these agreements will be structured will be a function of negotiations to clearly identify roles and responsibilities, program schedule requirements, cost allocation, and trackage rights agreements. Separate agreements will be required with each operator, except for areas of the program where more than two parties must cooperate to effectuate the improvements. It is also possible that NYSDOT will need to execute agreements with other governmental units, such as the State Historic Preservation Office, or municipalities where local funds are to be provided or where municipal station work needs to be coordinated with other program improvements.

8.6.2 Railroad Agreements

Railroad operating agreements are required to define track sharing/occupancy arrangements, dispatching responsibilities and protocols, and vehicle, station, and track/signal infrastructure obligations. Canadian Pacific Rail and Norfolk Southern have trackage rights agreements and may have to be engaged for formal agreements regarding their service requirements.

8.7 Other Responsibilities

As program sponsor, NYSDOT will also be responsible for securing any necessary federal or state permits and approvals, for securing property, for managing municipal and stakeholder engagement, and for interfacing with FRA. NYSDOT also has responsibility for developing and securing agreements, funding and guiding design, coordinating with municipalities around station area plans and improvements and intermodal services at stations, and contracting with MNR, Amtrak and CSXT for the required switch, track and signal work. NYSDOT must also complete all required NEPA documentation and secure all required NEPA findings, and secure state and federal environmental permits. NYSDOT will also set minimum standards for customer service, contract the operation of the Empire Corridor passenger services, and monitor program metrics to ensure ridership growth and related financial conditions track against expectations.

9.0 ASSESSMENT OF BENEFITS

Investment in intercity passenger rail and high speed rail is motivated by the desire to realize direct passenger benefits associated with faster, safer, and more reliable travel, and broader-based community benefits of improved environmental quality, reduced air and highway congestion, and economic development. Passenger rail improvements create economic impacts in the form of travel time savings for rail users, reduced congestion on other transportation modes, and regional productivity increases from more efficient access to larger labor and trade markets. These savings cascade through the economy, creating jobs, increasing overall activity, and raising personal income.

The direct benefits of a transportation improvement typically involve measures of improved travel service: time savings due to faster travel and/or greater reliability that reduces delay for travelers on the trains. Indirect benefits flow from regional productivity improvements due to greater efficiency in moving people and the economic ripple effects of higher spending levels on enhanced service.

For the High Speed Rail Empire Corridor Program, the direct benefits are a 94-minute reduction of overall travel time from 9 to 7.5 hours between NYC and Niagara Falls, and an increase in reliability from fewer than 75% to more than 90% of trains arriving on time. Of the 94 minutes of travel time savings, 80 minutes occurs along the Empire Corridor West segment between Albany and Niagara Falls. This is significant, as this section is most affected by freight conflicts and unreliability; in 2012, the “average delay” penalty assigned in the travel demand forecasting model was 90 minutes, with the great majority allocated to the Empire Corridor West section. Thus, the program will provide direct quantifiable benefits where the current service is most needing.

Indirect benefits of the program are improved environmental conditions (air quality, open land), reduced traffic congestion on key roads, the enhancement of rail stations as economic engines for downtown areas, and the freeing of airline capacity for longer-range travel that cannot be effectively served by rail.

The program costs are as specified in previous chapters. The program will cost \$7.323 billion (2017 dollars) to construct over 25 years, with improved travel time and reduced delay benefits accruing gradually as improvements are made. The maintenance and operation of the new infrastructure and the additional four daily trains intended to be added to the existing service will cost \$70 million annually at the completion of the program in 2040.

The benefits specific to the different segments of the Empire Corridor are described below, and these are summarized in a series of quantitative metrics for the program overall in Section 9.3.

9.1 Benefits Empire Corridor South

9.1.1 Travel Benefits (Direct Benefits)

- **Trip Time Reduction:** The 2-hour trip time target represents a 30-minute savings for passengers between Albany and New York City. The 30-minute trip time reduction will be accrued incrementally as the supporting projects are completed. This reduction benefits 90% of the ridership on the Empire Corridor.

- **Increase Frequency:** Train frequencies increase in early program phases, providing hourly service during peak periods. The number of round-trips New York City - Albany will grow from the current 13 to 17 roundtrips.
- **Direct Travel Cost Savings:** Passenger ridership forecasts for High Speed Rail Empire Corridor Program project ridership increasing to 2.7 million riders in 2040. It is estimated that over \$14 million in reduced travel costs would be saved by travelers shifting to rail for its higher speed, reduced trip times, and more reliable performance.
- **Improving On-Time Performance and Reliability:** The additional tracks support improvements in OTP and reliability. It is anticipated that a reliability of 95.4% can be achieved, compared to the current value below 80%.

9.1.2 Non-Travel (Indirect) Benefits

- **Environmental Impacts:** All improvements are within the existing right-of-way, resulting in minimal environmental impacts. Some projects contained in the program will require more focused environmental analysis before they can be built.
- **Employment and Jobs:** Operation of trains at higher speeds between Albany-Rensselaer and New York City creates opportunities for “super-commuters” to live and work from greater distances away from job centers while enjoying shorter commuting time and expanded employment opportunities. Employers gain the benefit of drawing upon a larger geographic area for a trained and skilled labor force.
- **Gradual and Continuing Improvement:** For Empire Corridor South, trip time reductions and service improvements will take effect as infrastructure improvements are completed between New York City and Albany-Rensselaer. Thus, program benefits will be realized steadily over time.
- **Ability to Implement:** System simulations show that the work can be sustained at the program levels without interfering with freight or passenger rail services. None of the work requires unproven or special technology and is all well within railroad industry standards.
- **Freight Train Operations:** Service frequency increases, along with future trip time reductions are achieved without interfering with freight rail service.

9.2 Benefits Empire Corridor West:

9.2.1 Travel Benefits (Direct Benefits)

- **Trip Time Reduction:** Overall trip time between Albany/Schenectady—Niagara Falls will be reduced by 1 hour 15 minutes, from the current 5 hour 58 minutes to 4 hours 43 minutes.
- **Increased Frequency:** Service west of Albany to Syracuse and Niagara Falls would grow to 8 roundtrips. The number of trains from Albany-Rensselaer to Syracuse would be increased, and as ridership grows and tracks are improved further west, these increased service frequencies would be gradually extended to Rochester, then Buffalo, and, finally, Niagara Falls.

- **Direct Travel Cost Savings:** Passenger ridership forecasts for High Speed Rail Empire Corridor Program project ridership increasing to 2.7 million riders in 2040. It is estimated that over \$14 million in reduced travel costs would be saved by travelers shifting to rail for its higher speed, reduced trip times, and more reliable performance.
- **Freight Train Operations:** Freight service is not impacted as the programs add 283 miles of third track and 39 miles of fourth track, significantly increasing the overall capacity of the system in keeping with projected increasing demand. These additional tracks are constructed in segments, minimizing the impact to freight and existing passenger train operations during construction. As projects are completed, improvement in freight rail service is expected as well.
- **Improving On-Time Performance and Reliability:** The additional tracks support improvements in OTP and reliability. It is anticipated that a reliability of 95.4% can be achieved, compared to the current value below 80%.

9.2.2 Non-Travel (Indirect) Benefits

- **Environmental Impacts:** All improvements are within the existing right-of-way, resulting in minimal environmental impacts. Some projects contained in the program will require more focused environmental analysis before they can be built. Air quality improvements result as travelers divert from more polluting auto and bus to less polluting trains.
- **Employment and Jobs:** Construction and operation of the improvements Albany-Rensselaer and Niagara Falls will confer significant economic benefit and jobs on upstate cities due to the multiplier effect of spending on material and construction work as well as additional staffing of local businesses in response to the economic infusion created by the program. Employers gain the benefit of drawing upon a larger geographic area for a trained and skilled labor force.
- **Gradual and Continuing Improvement:** For Empire Corridor West, trip time reductions and service improvements will take effect as infrastructure improvements are completed between Niagara Falls and Albany-Rensselaer. Thus, program benefits will be realized steadily over time.
- **Ability to Implement:** System simulations show that the work can be sustained at the program levels without undue interference with freight or passenger rail services. None of the work requires unproven or special technology and is all well within railroad industry standards.
- **Freight Train Operations:** Service frequency increases, along with future trip time reductions are achieved without undue interference with freight rail service.
- **Contribute to Economic Revitalization:** Economic benefits start with the construction activities necessary to complete the supporting projects. Further economic benefits flow from the multiplier effect of increased passenger spending in downtown station areas and the corridor as a whole.

9.3 Operational and Transportation Metrics

It is possible to express the program benefits in terms of travel/mobility, environment, energy, and economics. Exhibit 9-1 displays these benefits over 5-year implementation periods. The cumulative benefits of the program as a whole are shown at the end of the complete 25-year implementation period. (Appendix A shows the year-by-year detail underlying these metrics.) These benefits are driven by gains in ridership which result from improved on-time performance, reduced train delays, and travel time savings due to higher-speed operation. The metrics displayed show metric tons of air pollutant emissions avoided, gallons of diesel fuel saved, direct travel costs avoided by passengers switching from other travel modes to rail, millions of British Thermal Units (BTUs) of energy conserved, and jobs created to build and staff the improvements. The economic benefits are both direct employment for the rail system, indirect employment at businesses supporting the rail system, and as a result of the multiplier effect of construction activity and permanent job increases on local economies.³⁰

Exhibit 9-1 Benefits of High Speed Rail Empire Corridor Program

Benefits (5-Year Periods)	Years 1-5	Years 6-10	Years 11-15	Years 16-20	Years 21-25
Travel Time Savings per Train Each Year, Summed over 5-Year Periods (minutes)	10	36	14	10	24
Cumulative Totals	10	46	60	70	94
Total Minutes of Delay Saved Each Year, Summed over 5-Year Periods (minutes)	35,272	10,120	7,328	14,657	18,490
Cumulative Totals	35,272	45,392	52,720	67,377	85,867
Ridership Increase Each Year, Summed over 5-Year Periods (one- way trips)	221,952	393,536	122,695	87,564	257,674
Cumulative Totals	221,952	615,488	738,183	825,747	1,083,421

³⁰ Diverting Empire Corridor travelers from auto and air services to train will reduce revenue for air carriers and the New York State Thruway Authority. The diversion from auto, while significant in terms of rail riders gained, is quite small in terms of total Corridor auto trips (approximately 1/10th of 1%), however, and the loss of toll revenues due to this diversion is not likely to be of consequence. Air carriers will likely redeploy craft and crew to more heavily used routes to maintain revenue.

Benefits (5-Year Periods)	Years 1-5	Years 6-10	Years 11-15	Years 16-20	Years 21-25
Mode Shift Fare Cost Savings Each Year, Summed over 5-Year Periods (dollars)	6,965,4341	3,833,964	1,492,886	1,064,115	2,244,2246
Cumulative Totals	6,965,434	10,799,398	15,600,624	13,356,399	15,600,624
Passenger Train Energy Savings Each Year, Summed over 5-Year Periods (gallons of diesel fuel)	174,011	132,015	56,243	51,167	103,332
Cumulative Totals	174,011	306,026	362,269	413,435	516,767
Passenger Train Emissions Savings Each Year, Summed over 5-Year Periods (metric tons)	1,753	1,330	567	515	1,041
Cumulative Totals	1,753	3,082	3,649	4,164	5,205
Mode Shift Energy Savings Each Year, Summed over 5-Year Periods (millions of BTUs)	80,148	142,108	44,306	31,620	93,047
Cumulative Totals	80,148	222,256	266,562	298,182	391,229

Benefits (5-Year Periods)	Years 1-5	Years 6-10	Years 11-15	Years 16-20	Years 21-25
Mode Shift Emissions Savings Each Year, Summed over 5-Year Periods (metric tons of regulated pollutants + greenhouse gas (GHG))	6,823	12,096	3,771	2,691	7,920
Cumulative Totals	6,823	18,919	22,690	25,381	33,301
Mode Shift Safety Savings Each Year, Summed over 5-Year Periods (accidents)	29	45	14	10	19
Cumulative Totals	29	74	88	98	117
Job Creation Each Year, Summed over 5-Year Periods (job-years)	9,419	10,134	11,541	12,190	12,494
Cumulative Totals	9,419	19,552	31,093	43,283	55,777
Direct Employment Each Year, Summed over 5-Year Periods (rail system jobs)	24	42	31	29	47
Cumulative Totals	24	66	97	126,118	173

Key³¹

Travel Time Savings per Train Each Year, Summed over 5-Year Periods (minutes)	The total scheduled minutes saved due to increased train speeds in each year for each train to which the travel time benefit applies, totaled over each 5-year period. Thus, in Year 1 there is no change in travel time for any Empire Corridor trains (no projects are yet completed); in Year 2 every train will gain 2 minutes more than in Year 1 (since all trains traverse the Empire Corridor South segment); in Year 3 every train will travel 2 minutes faster than in year 2; in Year 4 every train will travel 2 minutes faster than in Year 3; and in Year 5 every train will travel 4 minutes faster than in Year 4. The total effect of the Years 1-5 improvements is that every Empire Corridor train in Year 5 will travel 10 minutes faster than they did in Year 1. In Years 6-25, improvements ultimately producing an 84-minute additional time savings will be confined to the Empire Corridor West segment, and only the eight trains traveling beyond Albany to Niagara Falls and back will receive the travel time benefits for each year of improvements; the other 13 NYC-Albany trains will not see any additional travel time improvements.
Total Minutes of Delay Saved Each Year, Summed over 5-Year Periods (minutes)	The product of the reduction of train operating minutes for each train due to improved on-time performance (NYC – Niagara Falls) and the number of trains to which the reduction applies in each year, totaled over each 5-year period. Thus, if the improvement in on-time performance in a particular year results in a 3-minute reduction of delay for four weekday trains, and a 1-minute reduction of delay for nine other weekday trains, the total delay reduction over the entire year would be 5,460 minutes. Over five years, the reductions in delay accomplished in each of the five years are added together to express the reduction in delay at the end of the five-year period compared to the delay at the beginning of the five-year period.
Ridership Increase Each Year, Summed over 5-Year Periods (one-way trips)	The total increase in one-way trips by passengers for all origin-destination pairs (among 17 stations, including Saratoga) in a given year, totaled over each 5-year period. For example, in Year 3, the 2-minute travel time savings achieved through program improvements will draw approximately 55,219 new passengers (each making a single trip) from auto/bus/air to rail. ³²
Mode Shift Fare Cost Savings Each Year, Summed over 5-Year Periods (dollars)	Total fare costs saved by passengers switching to rail from other modes each year (auto mode uses \$0.17/mile + tolls; bus, air and rail use 2010 fares, inflated to 2017 on the basis of northeast Consumer Price Index; https://www.ssa.gov/OACT/STATS/cpiw.html), totaled over each 5-year period.

³¹ See Appendix A for detailed year-by-year results.

³² The same travel time savings may produce slightly different ridership gains in different years because the savings occurs at different areas along the Empire Corridor, with benefits flowing to different origin/ destination pairs with different base ridership values.

Passenger Train Energy Savings Each Year, Summed over 5-Year Periods (gallons of diesel fuel)	Gallons of diesel fuel saved due to the reduction in total minutes of delay for locomotives as a consequence of improved on-time performance, plus the reduction in total minutes of operation due to higher speeds, each year, totaled over each 5-year period. This metric is derived based on locomotives burning 70 gallons of diesel fuel per hour of operation (as an average value across all speeds, including stopped). Thus, if the program improvements in a particular year reduce delay by 6,000 minutes (100 hours), then the savings would be $100 \times 70 = 7,000$ gallons of diesel fuel saved. For Years 1-5, 35,272 minutes – or 588 hours – of delay are saved, and daily trains also receive annual travel time savings of (Year 1) 0 minutes, (Year 2) 2 minutes for all 26 trains, (Year 3) 2 minutes for 30 trains, (Year 4) 2 minutes for 32 trains, and (Year 5) 4 minutes for 34 trains, adding 113,880 – or 1,898 hours – of travel time improvement. The total time savings resulting from reduced delay and faster speeds is therefore 149,152 minutes, or 2,486 hours. This reduced time of operation yields a diesel fuel savings Years 1-5 of $2,486 \text{ hours} \times 70 \text{ gallons/hour} = 174,010$ gallons.
Passenger Train Emissions Savings Each Year, Summed over 5-Year Periods (metric tons of regulated pollutants + GHG)	Metric tons of diesel-range pollutants + CO ₂ emissions avoided in each year (based on 22.2 ³³ pounds of CO ₂ conserved for each gallon of diesel conserved), totaled over each 5-year period. Thus, for Years 1-5, given a savings of 174,010 gallons of diesel fuel, then $174,010 \times 22.2 = 3,863,037$ pounds of pollutants saved. As a metric ton is 2,204 pounds, this translates into 1,753 metric tons of pollutant emissions saved.
Mode Shift Energy Savings Each Year, Summed over 5-Year Periods (millions of BTUs)	Millions of British Thermal Units (BTUs) of energy conserved in each year (totaled over each 5-year period): the net of total additional energy used or conserved from increased rail operations and maintenance (increased) and reduced on-road operations and maintenance due to mode shift of travelers to rail. The Tier 1 Final EIS notes an overall reduction in energy consumption by Empire Corridor travelers of 391,227 million BTUs saved in 2035 due to full program implementation and the diversion of 1,083,000 trips from auto/bus/air to rail. Allocating this total savings on the basis of ridership diverted each year in response to gradual improvements in reliability and speed, an equivalent portion of the overall energy savings is assigned. The value in the Tier 1 Final EIS is derived from industry standard energy profiles for auto, bus, air and rail travel, with increases in rail energy consumption (due to more trains to carry more passengers) offset by decreases in energy use by auto/bus/air as travelers divert to rail. Thus, if the total energy savings is due to the diversion of 1.083 million trips from auto/bus/air to rail in 2035, then the proportion of that diversion represented by each year's ridership gains (totaled over Years 1-5) applied to the total 391,227 million BTUs conserved yields the energy savings in that year due to mode shifts among Empire Corridor travelers. In Years 1-5, 221,952 trips – or 20.4% of the total 1.083 million trips diverted by Year 25 – are diverted from auto/bus/air to rail. Applying the 20.4% to the total 391,227 million BTUs saved over the entire 25-year program produces a result of 80,148 million BTUs saved.

³³ Emission factors for diesel fuel were provided at https://www.epa.gov/sites/production/files/2015-07/documents/emission-factors_2014.pdf

Mode Shift Emissions Savings (metric tons of regulated pollutants + greenhouse gas [GHG])	<p>Metric tons of emissions avoided for all regulated pollutants³⁴ + CO₂ in that year (totaled over each 5-year period): the net of total additional emissions produced or avoided from increased rail operations and maintenance (increased) and reduced on-road operations and maintenance due to mode shift of travelers to rail (avoided). The Tier 1 Final EIS notes an overall reduction in energy consumption by Empire Corridor travelers of 33,188 metric tons of CO₂ saved in 2035 due to full program implementation and the diversion of 1,083,000 trips from auto/bus/air to rail. Allocating this total savings on the basis of ridership diverted each year in response to gradual improvements in reliability and speed, an equivalent portion of the overall energy savings is assigned. The value in the Tier 1 Final EIS is derived from industry standard energy profiles for auto, bus, air and rail travel, with increases in rail energy consumption (due to more trains to carry more passengers) offset by decreases in energy use by auto/bus/air as travelers divert to rail. Thus, if the total energy savings is due to the diversion of 1.083 million trips from auto/bus/air to rail in 2035, then the proportion of that diversion represented by each year's ridership gains (totaled over Years 1-5) applied to the total 33,188 metric tons of CO₂ conserved yields the emissions reduction in that year due to mode shifts among Empire Corridor travelers. In Years 1-5, 221,952 trips – or 20.4% of the total 1.083 million trips diverted by Year 25 – are diverted from auto/bus/air to rail. Applying the 20.4% to the total 33,188 metric tons of CO₂ saved over the entire 25-year program produces a result of 6,799 metric tons of CO₂ saved. Adding the small amount of criteria pollutant emissions avoided (dwarfed by the amount of CO₂ generated burning diesel fuel) produces the result in the table of 6,823 metric tons of emissions saved.</p>
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³⁴ Regulated Pollutants include CO, HC, NOx, SOx, PM_{2.5}, PM₁₀, Ozone, Lead (Pb). Reductions in regulated pollutants are dwarfed by reductions in CO₂ due to cleaner engines and the conversion of 99% of diesel fuel to CO₂ during combustion.

Mode Shift Safety Savings (accidents)	<p>Total accidents avoided due to mode shift from auto/bus/air to rail in each year, totaled over each 5-year period. This metric is derived using data provided by the National Transportation Safety Board and other official sources for accidents per million passenger-miles of travel by air, bus, auto and rail. The accident rates used are:³⁵</p> <p>Auto 1.602941802 accidents/million passenger miles Bus 0.203433744 accidents/million passenger miles Air 0.000046892 accidents/million passenger miles Rail 0.011235955 accidents/million passenger miles</p> <p>Employing these drivers, for each 100 passengers diverted to rail, and applying the diversion percentages derived from the travel demand forecasting model of 50/30/20 for bus/air/auto, and the average trip lengths among origin-destination pairs embedded in the 2010 trip table that is the basis for all travel demand forecasting associated with this program, the reduction in accidents is derived as $(50 \times 0.203433744 \times \text{the average trip distance}) + (30 \times 0.000046892 \times \text{the average trip distance}) + (20 \times 1.602941802 \times \text{the average trip distance}) - (100 \times 0.011235955 \times \text{the average trip distance}) = \text{the net accidents avoided for each 100 travelers diverted to rail.}$</p>
Job Creation Each Year, Summed over 5-Year Periods (job-years)	<p>Total job-years created across all economic sectors due to construction activity, increased rail operations (direct employment), and increased related economic activity (indirect employment) in each year, totaled over each 5-year period. Although the metric provides a final number in the 25th year, the additional job-years created by the 25th year of the program due to increased rail operations is perpetual, resulting in 2,702 additional permanent employees on the railroad system. A Transportation Economic Development Impact System (TREDIS) model was used to develop total economic activity flowing from rail improvement investments, across all economic sectors. A total of 55,777 total job years³⁶ were predicted to result from the construction over the 25-year program term.³⁷ These were allocated proportionally by year on the basis of annual program investments accumulated in five-year segments.</p>

³⁵ Multiple sources.

³⁶ An analysis by HNTB resulted in an estimate of 2,129 job-years/year for the program at a \$6 billion funding level. Escalating this to \$7.323 billion and adding the job-years created due to the ripple effect of permanent railroad jobs added as infrastructure maintenance and operational needs expand, and then subtracting the direct rail jobs created to staff this infrastructure maintenance and operations produces the 55,777 job-years value attributed to the program.

³⁷ On a national standard, each \$1 billion of investment typically generates 7,700-8,100 job-years. Applying that metric range produces a range of potential economic impacts for the \$7.323 billion program of 56,378 – 59,316 job years created.

Direct Employment Each Year, Summed over 5-Year Periods (rail system jobs)	Additional rail jobs required to operate and maintain new infrastructure and additional trains, as needed in each year as improvements are built or new train service is added, totaled over each 5-year period. These were derived using industry-standard metrics of workers per unit of rail infrastructure (miles of track or number of switches, square footage of stations, per train crew requirements). For train crews, a distinction is made if trains are weekday only (two crews) or seven days a week (three crews). Train crew values also recognize contractual requirements for layover, hours of service limitations, and other factors that affect staffing requirements. Infrastructure maintenance staffing is a direct function of unit values, as maintenance staff are typically assigned to and pick jobs on a single-shift basis.
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Appendix A
Corridor Investment Strategy

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High Speed Rail Empire Corridor Program - Investment Strategy for Preferred Alternative for Years 1 – 25: Empire Capital District Connection & Empire Gateway

Program Area	Year																									Totals
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
Empire Capital District Connection	\$214	\$257	\$250	\$255	\$47																					\$1,023
Empire Gateway					\$200	\$260	\$265	\$265	\$220	\$255	\$280	\$280	\$330	\$330	\$330	\$300	\$300	\$350	\$350	\$350	\$325	\$375	\$375	\$325	\$235	\$6,300
Total Annual Investment (Millions)	\$214	\$257	\$250	\$255	\$247	\$260	\$265	\$265	\$220	\$255	\$280	\$280	\$330	\$330	\$330	\$300	\$300	\$350	\$350	\$350	\$325	\$375	\$375	\$325	\$235	\$7,323

High Speed Rail Empire Corridor Program - Investment Strategy for Preferred Alternative for Years 1 – 25: Empire Capital District Connection (NYC to Albany and Schenectady)

Project Number	Project Description – Location	Year																									Totals
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
ESC-04	Rock Slope Stabilization	\$9																									\$9
ESC-05	New Interlockings CP 82 / CP 99 / CP 136	\$23																									\$23
ESC-14	High Level Platforms - Hudson Station	\$42																									\$42
ESC-18	Tarrytown Pocket Track / Install 3 rd Rail CP 19 to CP 25 & CP 26 to CP 32	\$10																									\$10
ESC-51	Hudson Line Bridge Replacement MP 85 – 108	\$30																									\$30
ESC-47	Hudson Line - New Signal System CP 75 – 169		\$27	\$20																							\$47
ESC-20	High-Level Platform -Rhinecliff Station		\$15																								\$15
ESC-26	Poughkeepsie Yard & Track #3 raised to 90mph		\$15																								\$15
ESC-35	110 MPH: Speed Improvement Project; CP 75 – CP 114		\$50	\$50	\$70																						\$170
ESC-36	110 MPH: Speed Improvement Project; CP 114 - CP 124				\$50																						\$50
ESC-25	Hudson Highlands – 3rd Track for Overtakes & Raise Operating Speeds on Metro North Railroad between Croton-Harmon and CP 75			\$30	\$55																						\$85
ESC-06	Stuyvesant Third Track & Interlocking Improvements					\$47																					\$47
ESC-15	Livingston Avenue Moveable Bridge Replacement	\$100	\$100	\$50	\$30																						\$280
ESC-04	Rock Slope Stabilization	\$9																									\$200
Total Annual Investment (Millions)		\$214	\$257	\$250	\$255	\$47																					\$1,023

High Speed Rail Empire Corridor Program - Investment Strategy for Preferred Alternative for Years 1 – 25: Empire Gateway (Schenectady to Niagara Falls)

Project Number	Project Description – Location	Year																									Total
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
HSR-2	Schenectady - Hoffman’s (Rehabilitate Mohawk River Bridge)					\$200	\$160																				\$360
HSR-3	Hoffman’s (CP 169) - Amsterdam						\$100	\$135																			\$235
HSR-4	Fonda – Little Falls																		\$100	\$100	\$100	\$150	\$100	\$100			\$650
HSR-5	Little Falls – Herkimer											\$100	\$100	\$50													\$250
HSR-6	Herkimer – Utica										\$105																\$105
HSR-7	Utica Station Area									\$120																	\$120
HSR-8	Whitesboro – Oriskany								\$90																		\$90
HSR-9	Oriskany – Vernon									\$100	\$120																\$220
HSR-10	Vernon - East End of DeWitt Yard											\$100	\$100	\$50	\$50	\$50	\$50	\$50									\$450
HSR-11	Syracuse Station Area																						\$125	\$125	\$175	\$160	\$585
HSR-12	Warner’s – East End of Seneca River														\$160	\$100											\$260
HSR-13	East End of Seneca River Bridge – Palmyra																\$150	\$100	\$100	\$100	\$100						\$550
HSR-14	Rochester (West Shore By-pass) Waynesport – Chili Jct.															\$180	\$100										\$280
HSR-15	Rochester – Chili Jct.																					\$75	\$150	\$150	\$150	\$75	\$600
HSR-16	Interlocking CP 373										\$30																\$30
HSR-17	West Rochester											\$80	\$80	\$130													\$290
HSR-18	Chili Jct. – South Byron													\$100	\$120												\$220
HSR-19	South Byron – East Buffalo																	\$150	\$150	\$150	\$150	\$100					\$700
HSR-20	North Tonawanda – CP 23							\$130	\$175																		\$305
Total Annual Investment (Millions)						\$200	\$260	\$265	\$265	\$220	\$255	\$280	\$280	\$330	\$330	\$330	\$300	\$300	\$350	\$350	\$350	\$325	\$375	\$375	\$325	\$235	\$6,300

High Speed Rail Empire Corridor Program - Empire Capital Connection Improvements for Preferred Alternative: Years 1 - 5

Project Number	Project Area	Primary Project Type	Goals	Year 1 \$214	Year 2 \$257	Year 3 \$250	Year 4 \$255	Year 5 \$247	Estimated Project Cost (2017 \$ M)
ESC-04	Rhinecliff to Rensselaer	Rock Slope Stabilization	SAFETY <ul style="list-style-type: none">Reduce DelaysImprove Reliability	Start ESC-04	COMPLETE ESC-04				\$ 9
ESC-05	Staatsburg to Stuyvesant CP 82 – CP 99 – CP 136	Additional Interlocking's	RELIABILITY <ul style="list-style-type: none">Reduce DelaysSafetyIncrease Capacity		Start ESC-05	ESC-05 Continues	COMPLETE ESC-05		\$ 23
SC-14	Hudson Station	High Level Platform	RELIABILITY <ul style="list-style-type: none">Reduce Delays,Improve SafetyADA Improvement	Start ESC-14	COMPLETE ESC-14				\$ 42
ESC-51	Staatsburg to Jansenkil MP 85 – MP 108	Hudson Line Bridge Replacement	TRIP TIME REDUCTION <ul style="list-style-type: none">CapacitySpeed ImprovementsState of Good Repair	Start ESC-51	ESC-51 Continues	COMPLETE ESC-51			\$ 30
ESC-47	New Signal System CP 75 – CP 169	Communications & Signals	TRIP TIME REDUCTION <ul style="list-style-type: none">CapacitySpeed ImprovementsSafety		Start ESC-47	ESC-47 Continues	COMPLETE ESC-47		\$ 47
ESC-20	Rhinecliff Station	High Level Platform	RELIABILITY <ul style="list-style-type: none">Reduce DelaysImprove SafetyADA Improvement		Start ESC-20	ESC-20 Continues	COMPLETE ESC-20		\$ 15
ESC-26	Poughkeepsie CP 72 – CP 75	Upgrade Track Speeds & Yard Improvements	TRIP TIME REDUCTION <ul style="list-style-type: none">Improve ReliabilityCapacity Improvements		Start ESC-26	ESC-26 Continues	COMPLETE ESC-26		\$ 15
ESC-35	CP 75 – CP 114	110 MPH Speed Improvement Project	TRIP TIME REDUCTION <ul style="list-style-type: none">Speed Improvements		Start ESC-35 & ESC-36	ESC-35 & ESC-36 Continues	COMPLETE ESC-35 & ESC-36		\$ 230
ESC-36	CP 114 – CP 124								

High Speed Rail Empire Corridor Program - Empire Capital Connection Improvements for Preferred Alternative: Years 1 – 5 (cont.)

Project Number	Project Area	Primary Project Type	Goals	Year 1 \$214	Year 2 \$257	Year 3 \$250	Year 4 \$255	Year 5 \$247	Estimated Project Cost (2017 \$ M)
ESC-25	Hudson Highlands Metro North Railroad between Croton-Harmon and CP 75	3rd Track for Overtakes & Raise Operating Speeds	TRIP TIME REDUCTION <ul style="list-style-type: none">CapacitySpeed ImprovementsState of Good Repair			Start ESC-25	ESC-25 Continues	COMPLETE ESC-25	\$ 85
ESC-18	Metro North Railroad Tarrytown	Pocket Track CP 25 Additional 3rd Rail	RELIABILITY <ul style="list-style-type: none">Reduce DelaysSafetyIncrease Capacity	Start ESC-18	COMPLETE ESC-18				\$ 10
ESC-06	Stuyvesant CP 124 + CP 125	Third Track & Interlocking Improvements	RELIABILITY <ul style="list-style-type: none">Reduce Delays,Improve SafetyADA Improvement	Start ESC-14	COMPLETE ESC-14			COMPLETE ESC-14	\$ 47
ESC-15	Livingston Avenue Moveable Bridge	Replacement of Bridge	RELIABILITY <ul style="list-style-type: none">CapacitySafetyState of Good Repair	Start ESC-51	ESC-51 Continues	COMPLETE ESC-51			\$ 280
HSR-2	EMPIRE GATEWAY	Double Track Project Schenectady (CP 161 to CP 169)	TRIP TIME REDUCTION <ul style="list-style-type: none">CapacitySpeed ImprovementsSafety					Start HSR-2	\$ 200
HSR	Acquisition of additional locomotives and coaches to support service expansion	Equipment	SERVICE GROWTH <ul style="list-style-type: none">Increase CapacityImprove ReliabilityImprove Passenger Experience		Start Procurement of New Locomotives & Coaches	Procurement of New Locomotives & Coaches Continues	Procurement of New Locomotives & Coaches Continues	COMPLETED Procurement of New Locomotives & Coaches	\$ 200
								Total Investment Years 1 through 5	\$ 1,233 M

High Speed Rail Empire Corridor Program - Capital District Connection - Improvements and Benefits for Preferred Alternative (Years 1-5)

Benefits	Year 1	Year 2	Year 3	Year 4	Year 5
Service Improvements		Trip Time Savings (for all 26 trains) - 2 min ECS benefit location	Two New Round Trips: Saratoga – NYC NYC – Albany Trip Time Savings (for all 30 trains) –4 min ECS benefit location	New Round Trip: NYC – Albany Trip Time Savings (cumulative for all 32 trains) - 6 min ECS benefit location	New Round Trip: NYC – Albany Trip Time Savings (cumulative for all 34 trains) - 10 min ECS benefit location
		Projected On Time Performance – 78.2%	Projected On Time Performance – 80.3%	Projected On Time Performance – 80.9%	Projected On Time Performance – 85.3%
State of Good Repair	2 new bridges	23 ½ miles new signal system 16 miles of Upgraded 110 mph track New Platform at Hudson Station 6 new bridges	47 miles new signal system 2 new bridges	23 ½ miles new signal system 3 miles new track 10 miles new Third Track 16 miles of Upgraded 110 mph track New Platform at Rhinecliff Station	8 miles new Third Track New Locomotives & Passenger Coaches in service
Passenger Travel Time Savings		2 minutes	2 minutes	2 minutes	4 minutes
Reduction in Annual Minutes of Delay		4,324 minutes (CP 12 – CP 33)		6,615 minutes (CP 75 – CP 142) 3,159 minutes (CP 72 – CP 75)	21,174 minutes (CP 33 – CP 72)
Ridership increase	0	52,630	55,219	41,436	72,667
Mode Shift Fare Cost Savings	0	\$1,946,072	\$1,768,493	\$1,320,203	\$1,930,665
Passenger Train Energy Savings	0	27,188	25,550	38,656	82,616
Passenger Train Emissions Savings	0	274	257	389	832
Mode Shift Energy Savings	0	19,005	19,940	14,963	26,240
Mode Shift Emissions Savings	0	1,618	1,697	1,274	2,234
Mode Shift Safety Savings	0	6	6	7	10

Economic Impact	Year 1	Year 2	Year 3	Year 4	Year 5
Job Creation	1,555	1,994	1,947	1,952	1,970
Direct Employment	0	5	8	5	6

High Speed Rail Empire Corridor Program - Empire Gateway Improvements for Preferred Alternative: Years 6 - 10

Project Number	Project Area	Primary Project Type	Goals	Year 6 \$260	Year 7 \$265	Year 8 \$265	Year 9 \$220	Year 10 \$255	Estimated Project Cost (2017 \$ M)
HSR-2	Capital District <i>New Trackage eliminates single track operation and rehabilitate Mohawk River Bridge</i>	Track & Signal Install 2nd Track from CP 161 (Schenectady) to CP 169 (Hoffman's)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reduction	COMPLETE Double Track \$160 m					\$160
HSR-3	Mohawk Valley <i>Adds trackage and increases operating speeds to support trip time reductions</i>	Track & Signal Add Main Tracks from CP 169 (Hoffman's) to CP 184 (Fonda)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reduction	Start Installation \$ 100 m	COMPLETE Installation \$135 m				\$235
HSR-6	Mohawk Valley <i>Adds trackage and increases operating speeds to support trip time reductions</i>	Track & Signal Additional Main Tracks from CP 226 (Herkimer) to CP 235 (Utica)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reduction					COMPLETE Installation of Track \$ 105 m	\$105
HSR-7	Utica Union Station <i>Improves operation of passenger trains and freight trains at Utica Union Station</i>	Track & Signal Add Main Tracks from CP 235 (Utica) to CP 239 (Oriskany)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityTrip Time reductionImprove Station Operations				COMPLETE Installation of Track \$120 m		\$120
HSR-8	Mohawk Valley <i>Adds trackage and increases operating speeds to support trip time reductions</i>	Track & Signal Add Main Tracks from CP 239 (Whitesboro) to CP 246 (Oriskany)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reduction			COMPLETE Installation of Track \$ 90 m			\$90
HSR-9	Mohawk Valley <i>Adds trackage and increases operating speeds to support trip time reductions</i>	Track & Signal Additional Main Tracks CP 246 (Oriskany) – CP 259 (Vernon)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reduction				Start Installation \$ 100 m	COMPLETE Installation \$ 120 m	\$220
HSR-16	Rochester Station <i>Improve interlocking to improve operation of freight and passenger trains west of Rochester Station</i>	Track & Signal Rebuild Interlocking at CP 373	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityTrip Time reductionImproves Station Operation					COMPLETE Rebuild Interlocking CP 373 \$ 30 m	\$ 30
HSR-20	Niagara Branch <i>Additional capacity eliminates single track operation</i>	Track & Signal North Tonawanda to CP 23	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reduction		Start Installation of Double Track & Eliminate Single Track Operation \$ 130 m	COMPLETE Installation of Double Track Eliminate Single Track Operation \$ 175 m			\$305
Total Investment Years 6 through 10									\$ 1,265 M

High Speed Rail Empire Corridor Program - Empire Gateway - Improvements and Benefits for Preferred Alternative (Years 6-10)

Benefits	Year 6	Year 7	Year 8	Year 9	Year 10
Service Improvements	HSR-1 + HSR-2 COMPLETE <u>Trip Time Savings</u> (for all 8 trains) - 8 minute Projected On Time Performance – 85.8%	HSR-3 COMPLETE <u>Trip Time Savings</u> (for all 8 trains) - 1 minute Projected On Time Performance – 86.1%	HSR-8 COMPLETE (13 miles) HSR-20 COMPLETE (6 miles) <u>Trip Time Savings</u> (for all 6 trains) - 17 minutes Projected On Time Performance – 86.6%	HSR-7 COMPLETE (4 miles) Projected On Time Performance – 86.8%	HSR-6 COMPLETE (11 miles) HSR-9 COMPLETE (13 miles) HSR-16 COMPLETE <u>Trip Time Savings</u> (for all 8 trains) - 10 minutes Projected On Time Performance – 87.6%
State of Good Repair	12 miles new signal system 12 miles new track Rehabilitate Mohawk River Bridge	10 miles new signal system 10 miles new track 1 new bridge	19 miles new signal system 19 miles new track 4 new bridges	4 miles new signal system 4 miles new Third Track 4 miles new Fourth Track	24 miles new signal system 24 miles new Third Track 24 miles new Fourth Track 5 new bridges New Interlocking at CP 373
Passenger Travel Time Savings	8 minutes	1 minute	0 minutes (HSR-8) 17 minutes (HSR-20)	0 minutes	6 minutes (HSR-6) 1 minutes (HSR-11) 3 minutes (HSR-15)
Reduction in Annual Minutes of Delay	2,443 minutes	1,745 minutes	1,221 minutes (HSR-8) 1,047 minutes (HSR-20)	698 minutes	1,570 minutes (HSR-6) 2,268 minutes (HSR-9) 174 minutes (HSR-16)
Ridership Increase	101,790	10,412	184,636	0	96,698
Mode Shift Fare Cost Savings	\$915,827	\$164,150	\$1,718,007	\$0	\$1,035,980
Passenger Train Energy Savings	30,104	3,436	58,914	814	38,747
Passenger Train Emissions Savings	303	35	593	8	390
Mode Shift Energy Savings	36,757	3,760	66,673	0	34,918
Mode Shift Emissions Savings	3,129	320	5,675	0	2,972
Mode Shift Safety Savings	12	8	16	0	9

Economic Impact	Year 6	Year 7	Year 8	Year 9	Year 10
Job Creation (job-years)	2,135	1,946	2,378	1,596	2,080
Direct Employment	9	6	9	3	15

High Speed Rail Empire Corridor Program - Empire Gateway Improvements for Preferred Alternative: Years 11 - 15

Project Number	Project Area	Primary Project Type	Goals	Year 11 \$280	Year 12 \$280	Year 13 \$330	Year 14 \$330	Year 15 \$330	Estimated Project Cost (2017 \$ M)
HSR-5	Mohawk Valley <i>Adds trackage to allow passenger train faster operation with freight trains</i>	Track & Signal Additional Main Tracks CP 218 (Little Falls) – CP 226 (Herkimer)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reductionImproved Station Operations	Start Installation \$ 100 m	Continue Installation \$ 100 m	COMPLETE Installation \$ 50 m			\$ 250
HSR-10	Syracuse Terminal Subdivision <i>Increased Capacity that will support trip time reductions</i>	Track & Signal Additional Main Tracks CP 259 (Vernon) to CP 283 (East End of DeWitt Yard)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reduction	Start Installation \$ 100 m	Continue Installation \$ 100 m	Continue Installation of \$ 50 m	Continue Installation \$ 50 m	Continue Installation \$ 50 m	\$ 350
HSR-12	East of Seneca River Bridge <i>Adds trackage and increases operating speeds to support trip time reductions</i>	Track & Signal Additional Main Tracks CP 310 (Warner's) – CP 320 (east end of Seneca River)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reduction				Start Installation Increase operating speeds for trip time reduction \$ 160 m	COMPLETE Installation Increase operating speeds for trip time reduction \$ 100 m	\$ 260
HSR-14	Rochester “West Shore By-pass” <i>Routes freight trains away from downtown Rochester and Station area increasing capacity</i>	Track & Signal Additional Main Tracks “West Shore By-Pass” CP 347 (Waynesport) –CP 368 (Chili Jct.)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reductionImproved Station Operations					Start Installation \$ 180 m	\$ 180
HSR-17	Rochester Subdivision <i>Adds capacity to allow for better operation of freight and passenger trains east of Rochester Station</i>	Track & Signal Additional Main Tracks CP 374 – CP 388 in the Rochester area	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reductionImproved Station Operations	Start Installation \$ 80 m	Continue Installation \$ 80 m	COMPLETE Installation \$ 130 m			\$ 290
HSR-18	Rochester Subdivision <i>Adds trackage to increase operating speeds and support trip time reductions</i>	Track & Signal Additional Main Tracks CP 399 (Chili Jct.) – CP 409 (South Byron)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reductionImproved Station Operations				Start Installation Contribute to Trip Time Reduction \$ 100 m	COMPLETE Installation Contribute to Trip Time Reduction \$ 120 m	\$ 220
Total Investment Years 11 through 15									\$ 1,550 M

High Speed Rail Empire Corridor Program - Empire Gateway - Improvements and Benefits for Preferred Alternative (Years 11-15)

Benefits	Year 11	Year 12	Year 13	Year 14	Year 15
Service Improvements			HSR-5 – COMPLETE (15 miles) HSR-17 – COMPLETE (11 miles) Trip Time Savings (for all 8 trains) - 8 minutes		HSR-12 – COMPLETE (10 miles) HSR-18 – COMPLETE (33 miles) Trip Time Savings (for all 8 trains) - 6 minutes
			Projected On Time Performance – 88.3%		Projected On Time Performance – 89.1%
State of Good Repair			26 miles new signal system 26 miles new Third Track 26 miles new Fourth Track 1 new bridge		43 miles new signal system 43 miles new Third Track 10 miles new Fourth Track 3 new bridges
Passenger Travel Time Savings			2 minutes (HSR-5) 6 minutes (HSR-17)		2 minutes (HSR-12) 4 minutes (HSR-18)
Reduction in Annual Minutes of Delay			2,268 minutes (HSR-5) 1,396 minutes (HSR-17)		1,745 minutes (HSR-12) 1,919 minutes (HSR-18)
Ridership Increase	0	0	70,107	0	52,588
Mode Shift Fare Cost Savings	\$0	\$0	\$872,001	\$0	\$620,886
Passenger Train Energy Savings	0	0	31,528	0	24,715
Passenger Train Emissions Savings	0	0	318	0	249
Mode Shift Energy Savings	0	0	25,316	0	18,990
Mode Shift Emissions Savings	0	0	2,155	0	1,616
Mode Shift Safety Savings	0	0	8	0	6

Economic Impact	Year 11	Year 12	Year 13	Year 14	Year 15
Job Creation	2,035	2,035	2,552	2,399	2,520
Direct Employment	0	0	21	0	10

High Speed Rail Empire Corridor Program - Empire Gateway Improvements for Preferred Alternative: Years 16 – 20

Project Number	Project Area	Primary Project Type	Goals	Year 16 \$300	Year 17 \$300	Year 18 \$350	Year 19 \$350	Year 20 \$350	Estimated Project Cost (2017 \$ M)
HSR-4	Mohawk Valley <i>Adds trackage to allow passenger trains faster operation on the multiple curves along the Mohawk River</i>	Track & Signal Additional Main Tracks CP 184 (Fonda) to CP 217 (Little Falls)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reductions			Start Installation \$100 m	Continue Installation \$100 m	Continue Installation \$100 m	\$300
HSR-10	Syracuse Terminal Subdivision <i>Increased Capacity that will support trip time reductions</i>	Track & Signal Additional Main Tracks CP 259 (Vernon) to CP 283 (East End of DeWitt Yard) -	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reductions	Continue Installation Significant Trip Reduction \$ 50 m	COMPLETE Installation Significant Trip Reduction \$ 50 m				\$100
HSR-13	Seneca River Bridge <i>Eliminate 40 MPH Speed Restriction on Seneca River Bridge</i> <i>Significant Trip Reduction</i>	Track & Signal Additional Main Tracks CP 320 (Seneca River Bridge) to CP 359 (Palmyra)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reductions	Start Installation Replacement Seneca River Bridge Eliminate Speed Restriction \$ 150 m	Continue Installation Replacement Seneca River Bridge Eliminate Speed Restriction \$ 100 m	Continue Installation Replacement Seneca River Bridge Eliminate Speed Restriction \$ 100 m	Continue Installation Replacement Seneca River Bridge Eliminate Speed Restriction \$ 100 m	COMPLETE Installation Replacement Seneca River Bridge Eliminate Speed Restriction \$ 100 m	\$550
HSR-14	Rochester “West Shore By-pass” <i>Routes freight trains away from downtown Rochester and Station area increasing capacity</i>	Track & Signal Additional Main Tracks “West Shore By-Pass” CP 347 (Waynesport) –CP 368 (Chili Jct.)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reductions	COMPLETE Installation \$ 100 m					\$100
HSR-19	Buffalo Terminal & Rochester Subdivision <i>Increased Capacity that will support trip time reductions Significant Trip Time Reduction</i>	Track & Signal Additional Main Tracks CP 399 (South Byron) to CP 432 (East Buffalo)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reductions		Start Installation Significant Trip Time Reduction \$ 150 m	Continue Installation Significant Trip Time Reduction \$ 150 m	Continue Installation Significant Trip Time Reduction \$ 150 m	Continue Installation Significant Trip Time Reduction \$ 150 m	\$600
Total Investment Years 16 through 20									\$1,650 M

High Speed Rail Empire Corridor Program - Empire Gateway - Improvements and Benefits for Preferred Alternative (Years 11-15)

Benefits	Year 16	Year 17	Year 18	Year 19	Year 20
Service Improvements	HSR-14 – COMPLETE Expands Capacity of Train Operations in Rochester area with freight trains operating “West Shore By-pass” Projected On Time Performance – 89.8%	HSR-10 COMPLETE			HSR-13 – COMPLETE
		Projected On Time Performance – 90.7%			Projected On Time Performance – 92.1%
State of Good Repair	21 miles new signal system 21 miles new track 5 new bridges	24 miles new signal system 24 miles new Third Track 1 new bridge			39 miles new signal system 39 miles new Third Track
Passenger Travel Time Savings		1 minute			9 minutes
Reduction in Annual Minutes of Delay	3,664 minutes	4,188 minutes			6,805 minutes
Ridership Growth	0	4,601	0	0	82,963
Mode Shift Fare Cost Savings	\$0	\$173,152	\$0	\$0	\$890,963
Passenger Train Energy Savings	4,275	8,293	0	0	38,599
Passenger Train Emissions Savings	43	84	0	0	389
Mode Shift Energy Savings	0	1,662	0	0	29,958
Mode Shift Emissions Savings	0	141	0	0	2,550
Mode Shift Safety Savings	0	2	0	0	8

Economic Impact	Year 16	Year 17	Year 18	Year 19	Year 20
Job Creation	2,174	2,183	2,544	2,544	2,745
Direct Employment	6	9	3	0	116

High Speed Rail Empire Corridor Program - Empire Gateway Improvements for Preferred Alternative: Years 21 - 25

Project Area	Primary Project Type	Goals	Year 21 • \$325	Year 22 \$375	Year 23 \$375	Year 24 \$325	Year 25 \$235	Estimated Project Cost (2017 M)	Project Area
HSR-4	Mohawk Valley <i>Adds trackage to allow passenger trains faster operation on the multiple curves along the Mohawk River</i>	Track & Signal Additional Main Tracks in the Mohawk Valley CP 184 (Fonda) – CP 217 (Little Falls)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reductions	Continue Installation \$150 m	Continue Installation \$100 m	COMPLETE Installation \$100 m			\$350
HSR-11	Syracuse Terminal Subdivision <i>Provides passenger trains their own station tracks to eliminate interferences with freight trains</i>	Track & Signal Additional Main Tracks CP 283 (East Syracuse) to CP 310 (West Syracuse)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reductionImproved Station Operations		Start Installation \$ 125 m	Continue Installation \$ 125 m	Continue Installation \$ 175 m	COMPLETE Installation \$ 160 m	\$585
HSR-15	Rochester Subdivision <i>Adds track capacity and supports better passenger train operations at Rochester</i>	Track & Signal Additional Main Tracks to “Main Line” CP 374 (Rochester) – CP 388 (Chili Jct.)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reductionImproved Station Operations	Start Installation \$ 75 m	Continue Installation \$ 150 m	Continue Installation \$ 150 m	Continue Installation \$ 150 m	COMPLETE Installation \$ 75 m	\$600
HSR-19	Buffalo Terminal & Rochester Subdivision <i>Significant Trip Time Reduction</i>	Track & Signal Additional Main Tracks CP 399 (South Byron) to CP 432 (East Buffalo)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reductionImproved Station Operations	COMPLETE Installation \$ 100 m					\$100
								Total Investment Years 21 through 25	\$ 1,635 M

High Speed Rail Empire Corridor Program - Empire Gateway - Improvements and Benefits for Preferred Alternative (Years 21-25)

Benefits	Year 21	Year 22	Year 23	Year 24	Year 25
Service Improvements	HSR-19 COMPLETE		HSR-4 COMPLETE		HSR-11 COMPLETE (17 miles) HSR-15 COMPLETE (14 miles)
	Projected On Time Performance – 93.3%		Projected On Time Performance – 94.5%		Projected On Time Performance - 96%
State of Good Repair	22 miles new signal system 22 miles of new Third Track 22 miles of new Fourth Track 1 new bridge		34 miles new signal system 34 miles new Third Track 8 new bridges		31 miles new signal system 31 miles new Third Track 3 new bridges
Passenger Travel Time Savings	13 minutes		7 minutes		1 minutes (HSR-11) 3 minutes (HSR-15)
Reduction in Annual Minutes of Delay	5,758 minutes		5,578 minutes		4,711 minutes (HSR-11) 2,443 minutes (HSR-15)
Ridership Growth	130,438	0	74,963	0	52,273
Mode Shift Fare Cost Savings	\$1,143,985	\$0	\$658,864	\$0	\$441,375
Passenger Train Energy Savings	51,004	0	30,354	0	21,973
Passenger Train Emissions Savings	514	0	306	0	221
Mode Shift Energy Savings	47,102	0	27,069	0	18,876
Mode Shift Emissions Savings	4,009	0	2,304	0	1,607
Mode Shift Safety Savings	10	0	6	0	3

Economic Impact	Year 21	Year 22	Year 23	Year 24	Year 25
Job Creation	2,687	2,726	2901	2,362	1,818
Direct Employment	12	0	15	0	20

Notes/Definitions

Per Train Travel Time Savings is the total scheduled minutes saved due to increased train speeds in each year for each train to which the travel time benefit applies, totaled over each 5-year period. Thus, in Year 1 there is no change in travel time for any Empire Corridor trains (no projects are yet completed); in Year 2 every train will gain 2 minutes more than in Year 1 (since all trains traverse the Empire Corridor segment); in Year 3 every train will travel 2 minutes faster than in year 2; in Year 4 every train will travel 2 minutes faster than in Year 3; and in Year 5 every train will travel 4 minutes faster than in Year 4. The total effect of the Years 1-5 improvements is that every Empire Corridor train in Year 5 will travel 10 minutes faster than they did in Year 1. In Years 6-25, improvements ultimately producing an 84-minute time savings will be confined to the Empire Corridor West segment, and only the eight trains traveling beyond Albany to Niagara Falls and back will receive the travel time benefits for each year of improvements. Passengers traveling between NYC and Albany during Years 6-25 will receive no further travel time benefit after Year 5, as the improvements in speed and travel time occur west of Albany during that period.

Annual Minutes of Delay Saved is the product of the reduction of train operating minutes for each train due to improved on-time performance (NYC – Niagara Falls) and the number of trains to which the reduction applies in each year, totaled over each 5-year period. Thus, if the improvement in on-time performance in a particular year results in a 3-minute reduction of delay for four weekday trains, and a 1-minute reduction of delay for nine other weekday trains, the total delay reduction over the entire year would be 5,460 minutes, or 455 hours of delay saved in that year. Over five years, the reductions in delay accomplished in each of the five years are added together to express the reduction in delay at the end of the five-year period compared to the delay at the beginning of the five-year period.

Ridership Increase is the total increase in one-way trips by passengers for all origin-destination pairs (among 17 stations, including Saratoga) in a given year, totaled over each 5-year period. For example, in Year 3, the 2-minute travel time savings achieved through program improvements will draw approximately 55,219 new passengers (each making a single trip) from auto/bus/air to rail.³⁸

Mode Shift Fare Cost Savings is the total fare costs saved by passengers switching to rail from other modes each year (auto mode uses \$0.17/mile + tolls; bus, air and rail use 2010 fares, inflated to 2017 on the basis of northeast CPI; <https://www.ssa.gov/OACT/STATS/cpiw.html>), totaled over each 5-year period.

Passenger Train Energy Savings is the gallons of diesel fuel saved due to the reduction in total minutes of delay for locomotives as a consequence of improved on-time performance, plus the reduction in total minutes of operation due to higher speeds, each year, totaled over each 5-year period. This metric is derived based on locomotives burning 70 gallons of diesel fuel per hour of operation (as an average value across all speeds, including stopped). Thus, if the program improvements in a particular year reduce delay by 6,000 minutes (100 hours), then the savings would be 100 X 70 = 7,000 gallons of diesel fuel saved. For Years 1-5, 35,272 minutes – or 588 hours – of delay are saved, and daily trains also receive annual travel time savings of (Year 1) 0 minutes, (Year 2) 2 minutes for all 26 trains, (Year 3) 2 minutes for 30 trains, (Year 4) 2 minutes for 32 trains, and (Year 5) 4 minutes for 34 trains, adding 113,880 – or 1,898 hours – of travel time improvement. The total time savings resulting from reduced delay and faster speeds is therefore 149,152 minutes, or 2,486 hours. This reduced time of operation yields a diesel fuel savings Years 1-5 of 2,486 hours X 70 gallons/hour = 174,010 gallons.

Passenger Train Emission Savings is the metric tons of diesel-range pollutants + CO2 emissions avoided in each year (based on 22.2³⁹ pounds of CO2 conserved for each gallon of diesel conserved), totaled over each 5-year period. Thus, for Years 1-5, given a savings of 174,010 gallons of diesel fuel, then 174,010 X 22.2 = 3,863,037 pounds of pollutants saved. As a metric ton is 2,204 pounds, this translates into 1,753 metric tons of pollutant emissions saved.

Mode Shift Energy Savings is the millions of BTUs of energy conserved in each year (totaled over each 5-year period): the net of total additional energy used or conserved from increased rail operations and maintenance (increased) and reduced on-road operations and maintenance due to mode shift of travelers to rail. The Tier 1 Final EIS notes an overall reduction in energy consumption by Empire Corridor travelers of 391,227 million BTUs saved in 2035 due to full program implementation and the diversion of 1,083,000 trips from auto/bus/air to rail. Allocating this total savings on the basis of ridership diverted each year in response to gradual improvements in reliability and speed, an equivalent portion of the overall energy savings is assigned. The value in the Tier 1 Final EIS is derived from industry standard energy profiles for auto, bus, air and rail travel, with increases in rail energy consumption (due to more trains to carry more passengers) offset by decreases in energy use by auto/bus/air as travelers divert to rail. Thus, if the total energy savings is due to the diversion of 1.083 million trips from auto/bus/air to rail in 2035, then the proportion of that diversion represented by each year’s ridership gains (totaled over Years 1-5) applied to the total 391,227 million BTUs conserved yields the energy savings in that year due to mode shifts among Empire Corridor travelers. In Years 1-5, 221,952 trips – or 20.4% of the total 1.083 million trips diverted by Year 25 – are diverted from auto/bus/air to rail. Applying the 20.4% to the total 391,227 million BTUs saved over the entire 25-year program produces a result of 80,148 million BTUs saved.

Mode Shift Emissions Savings is the metric tons of emissions avoided for all regulated pollutants⁴⁰ + CO2 in that year (totaled over each 5-year period): the net of total additional emissions produced or avoided from increased rail operations and maintenance (increased) and reduced on-road operations and maintenance due to mode shift of travelers to rail (avoided). The Tier 1 Final EIS notes an overall reduction in energy consumption by Empire Corridor travelers of 33,188 metric tons of CO2 saved in 2035 due to full program implementation and the diversion of 1,083,000 trips from auto/bus/air to rail. Allocating this total savings on the basis of ridership diverted each year in response to gradual improvements in reliability and speed, an equivalent portion of the overall energy savings is assigned. The value in the Tier 1 Final EIS is derived from industry standard energy profiles for auto, bus, air and rail travel, with increases in rail energy consumption (due to more trains to carry more passengers) offset by decreases in energy use by auto/bus/air as travelers divert to rail. Thus, if the total energy savings is due to the diversion of 1.083 million trips from auto/bus/air to rail in 2035, then the proportion of that diversion represented by each year’s ridership gains (totaled over Years 1-5) applied to the total 33,188 metric tons of CO2 conserved yields the emissions reduction in that year due to mode shifts among Empire Corridor travelers. In Years 1-5, 221,952 trips – or 20.4% of the total 1.083 million trips diverted by Year 25 – are diverted from auto/bus/air to rail. Applying the 20.4% to the total 33,188 metric tons of CO2 saved over the entire 25-year program produces a result of 6,799 metric tons of CO2 saved. Adding the small amount of criteria pollutant emissions avoided (dwarfed by the amount of CO2 generated burning diesel fuel) produces the result in the table of 6,823 metric tons of emissions saved.

³⁸ The same travel time savings may produce slightly different ridership gains in different years because the savings occurs at different areas along the Empire Corridor, with benefits flowing to different origin/ destination pairs with different base ridership values.

³⁹ Emission factors for diesel fuel were provided at https://www.epa.gov/sites/production/files/2015-07/documents/emission-factors_2014.pdf

⁴⁰ Regulated Pollutants include CO, HC, NOx, SOx, PM_{2.5}, PM₁₀, Ozone, Lead (Pb). Reductions in regulated pollutants are dwarfed by reductions in CO₂ due to cleaner engines and the conversion of 99% of diesel fuel to CO₂ during combustion.

Mode Shift Safety Savings is the total accidents avoided due to mode shift from auto/bus/air to rail in each year, totaled over each 5-year period. This metric is derived using data provided by the National Transportation Safety Board and other official sources for accidents per million passenger-miles of travel by air, bus, auto and rail. The accident rates used are:⁴¹

- Auto 1.602941802 accidents/million passenger miles
- Bus 0.203433744 accidents/million passenger miles
- Air 0.000046892 accidents/million passenger miles
- Rail 0.011235955 accidents/million passenger miles

Employing these drivers, for each 100 passengers diverted to rail, and applying the diversion percentages derived from the travel demand forecasting model of 50/30/20 for bus/air/auto, and the average trip lengths among origin-destination pairs embedded in the 2010 trip table that is the basis for all travel demand forecasting associated with this program, the reduction in accidents is derived as (50 X 0.203433744 X the average trip distance) + (30 X 0.000046892 X the average trip distance) + (20 X 1.602941802 X the average trip distance) – (100 X 0.011235955 X the average trip distance) = the net accidents avoided for each 100 travelers diverted to rail.

Job Creation is the total job-years created across all economic sectors due to construction activity, increased rail operations (direct employment), and increased related economic activity (indirect employment) in each year, totaled over each 5-year period. Although the metric provides a final number in the 25th year, the additional job-years created by the 25th year of the program due to increased rail operations is perpetual, resulting in 2,702 additional permanent employees on the railroad system. A Transportation Economic Development Impact System (TREDIS) model was used to develop total economic activity flowing from rail improvement investments, across all economic sectors. A total of 55,777 total job years⁴² were predicted to result from the construction over the 25-year program term.⁴³ These were allocated proportionally by year on the basis of annual program investments accumulated in five-year segments.

Direct Employment is the additional rail jobs required to operate and maintain new infrastructure and additional trains, as needed in each year as improvements are built or new train service is added, totaled over each 5-year period. These were derived using industry-standard metrics of workers per unit of rail infrastructure (miles of track or number of switches, square footage of stations, per train crew requirements). For train crews, a distinction is made if trains are weekday only (two crews) or seven days a week (three crews). Train crew values also recognize contractual requirements for layover, hours of service limitations, and other factors that affect staffing requirements. Infrastructure maintenance staffing is a direct function of unit values, as maintenance staff are typically assigned to and pick jobs on a single-shift basis.

⁴¹ Multiple sources.
⁴² An analysis by HNTB resulted in an estimate of 2,129 job-years/year for the program at a \$6 billion funding level. Escalating this to \$7.323 billion and adding the job-years created due to the ripple effect of permanent railroad jobs added as infrastructure maintenance and operational needs expand, and then subtracting the direct rail jobs created to staff this infrastructure maintenance and operations produces the 55,777 job-years value attributed to the program.
⁴³ On a national standard, each \$1 billion of investment typically generates 7,700-8,100 job-years. Applying that metric range produces a range of potential economic impacts for the \$7.323 billion program of 56,378 – 59,316 job years created.

SDP Errata

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Errata for Service Development Plan

The following table contains additions, corrections, and clarifications to the Service Development Plan (SDP) for the High Speed Rail Empire Corridor Program that was originally prepared in 2017. Additions to the original text are shown in bold text, and deletions are shown in red strike-outs. These additions, corrections, and clarifications do not reflect any changes to the technical analysis reflected in the SDP, which may be subject to updating as elements of the Tier 1 Final EIS are advanced into Tier 2 environmental analysis.

Errata Sheet for Service Development Plan

#	Page #	Original SDP Text	Revised SDP Text	Reason for Changes
1	p. 1	Carrying forward a vision for the future, New York has one of the largest state-supported programs for improving intercity rail passenger service in the nation, that has included installation of a second track between Albany-Rensselaer and Schenectady.	Carrying forward a vision for the future, New York has one of the largest state-supported programs for improving intercity rail passenger service in the nation, that has included installation of a second track between Albany-Rensselaer and Schenectady and station reconstruction at Buffalo-Exchange Street, Niagara Falls, Schenectady, and Rochester.	Text has been updated to reflect major station reconstructions over the past 10 years.
2	p. 1	Enhancements to the intercity rail passenger network will complement the extensive commuter train system In the New York City metropolitan area that has become an integral part of lives of residents of 11 city and suburban counties served by the Metropolitan Transportation Authority (MTA).	Enhancements to the intercity rail passenger network will complement the extensive commuter train system in in the New York City metropolitan area that has become an integral part of lives of residents of 11 city and suburban counties served by the Metropolitan Transportation Authority (MTA), the busiest commuter railroad in the country.	Clarified high use of MTA railroad when compared with other commuter railroads nationally.
3	p. 2	Now, investments as part of the High Speed Rail Empire Corridor Program will support rail as a modern, fast, and reliable part of the transportation network that spans the state from New York City to Niagara Falls.	Now, investments as part of the High Speed Rail Empire Corridor Program will support rail as a modern, fast, and reliable part of the transportation network that spans the state from New York City to Niagara Falls. The Empire Corridor is one of eleven designated high-speed rail corridors nationwide, initially authorized under the Intermodal Surface Transportation Efficiency	Added history of federal high-speed rail designations and historic transportation use of the corridor. Highlighted the importance of Empire Corridor nationally for both passenger and freight rail.

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		As New York moves forward with its High Speed Rail Empire Corridor Program, with support from the Federal Railroad Administration (FRA), the state continues its commitment to supporting the improvement of Empire Corridor intercity passenger rail service. This program lays the foundation for a greater level of investments and improvements than previously, continuing New York's 200-year legacy of supporting public transportation as far back as the Erie Canal and Mohawk & Hudson Railroad of the 1800s.	<p>Act of 1991 (ISTEA) and supplemented by the Transportation Equity Act for the 21st Century of 1998 (TEA-21).</p> <p>As New York moves forward with its High Speed Rail Empire Corridor Program, with support from the Federal Railroad Administration (FRA), the state continues its commitment to supporting the improvement of Empire Corridor intercity passenger rail service. This program lays the foundation for a greater level of investments and improvements than previously, continuing New York's 200-year legacy of supporting public transportation as far back as the Erie Canal and Mohawk & Hudson Railroad of the 1800s. The Empire Corridor developed along the historic "Water Level Route" that followed the canal system connecting Lake Erie and the Hudson River to transport goods and services to and from New York City. The corridor helped to strengthen New York City as the preeminent U.S. trade center, by connecting markets in Canada and the Midwest with Albany, Montreal, Boston, and New York City. For many decades, the railroad was operated by the New York Central Railroad as a four-track mainline between Albany and Buffalo carrying passenger and freight trains on express and local tracks. As rail passenger travel declined post-World War II, the New York Central Railroad (NYCRR) began to reduce its operating costs by removing tracks, starting in the late 1950s, and thinning service. The line exists today as a two-track system between Albany and Buffalo (where it is a heavily used shared-use corridor with freight), continuing as a single track right-of-way on portions of the line extending north beyond Buffalo to Niagara Falls. This two-track line along Empire Corridor West is the busiest freight track in the state, carrying one of the highest volumes on the CSXT system nationwide.</p> <p>In addition to improving mainline passenger rail service among the State's major population centers of</p>	

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			<p>New York City, Albany, Schenectady, Utica, Rome, Syracuse, Rochester, and Buffalo, the program will benefit regional services operating along portions of the Empire Corridor for:</p> <ul style="list-style-type: none"> ▪ the Lake Shore Limited (from Boston to Albany), ▪ the Adirondack (from Schenectady to Montreal), ▪ the Ethan Allen Express (from Schenectady to Rutland, VT), ▪ the Lake Shore Limited West (from Buffalo to Chicago), and ▪ the Maple Leaf Service (from Niagara Falls to Toronto). <p>The Empire Corridor is therefore essential to New York in that it will significantly enhance this rail corridor's ability to transport large numbers of passengers and goods among these key population centers using energy and space-efficient rail services rather than highways and air travel corridors. The corridor is distinguished by its diversity of ownership and operating control and the mix of passenger and freight usage it supports, as the National Railroad Passenger Corporation's (Amtrak's) Empire Service shares tracks with CSXT and the Metropolitan Transportation Authority's Metro-North Railroad (Metro-North) commuter rail between NYC and its northern counties of Westchester and Dutchess.</p>	

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4	p. 2	<p>These savings cascade through the economy, creating jobs, increasing overall activity, and raising personal income.</p> <p>The program requires the phased expenditure of \$7.323 billion over 25 years, to continually grow track and signal capacity and straighten sharp curves to support higher operating speeds.¹ The program would add 283 miles of new third track¹ and 39 miles of new fourth track-and upgrade antiquated signal systems, greatly increasing operating flexibility for both freight and passenger trains.</p>	<p>These savings cascade through the economy, creating jobs, increasing overall economic activity, and raising personal income.</p> <p>The program requires the phased expenditure of \$7.323 \$8.5 billion (expressed in 2017 dollars) over 25 years, to continually involving a strategically sequenced set of track, bridge, and signal capacity projects that will update signal controls, provide separate tracks for passenger and freight services, and straighten sharp curves to support higher operating speeds.¹ The program would add 283 miles of new third track¹ along much of the corridor's two-track right-of-way and 39 miles of new fourth trackand. It will upgrade antiquated signal systems, greatly increasing operating flexibility for both freight and passenger trains.</p>	Clarified final program estimate. Change made globally.
5	p. 2	¹ The Tier 1 Environmental Impact Statement (EIS) evaluates a 20-year improvement program. The program is extended in this SDP to align work with past and expected future rates of spending of approximately \$240-\$250 million annually.	¹ The Tier 1 Environmental Impact Statement (EIS) evaluates a 25-20 -year improvement program. The program is extended in this SDP to align work with past and expected future rates of spending of approximately \$240-\$250 \$350 million annually.	Updated annual program costs. Changes made globally.
6	p. 2	The program would add 283 miles of new passing tracks and 39 miles of new fourth track and upgrade antiquated signal systems, greatly increasing operating flexibility for both freight and passenger trains.	<p>The program would add 283 miles of new third passing tracks² and 39 miles of new fourth track and upgrade antiquated signal systems, greatly increasing operating flexibility for both freight and passenger trains.</p> <p>² The Tier 1 Final EIS estimates that the length of new tracks added with the program would total approximately 370 miles.</p>	Clarification added on the types and length of new third and fourth track were added in the text, and footnote 2 clarifies total approximate length of new tracks.

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7	p. 3	The program is predicted to attract more than one million additional annual rail trips by 2040 ⁴ , for a total of 2.7 million annual trips; this would be nearly a 68% increase over the 1.6 million annual trips recorded for 2016. ⁵	<p>The program is predicted to attract more than one million additional annual rail trips by 2035 2040⁴, for a total of 2.7 2.6 million annual trips; this would be nearly a 68% increase over the 1.6 million annual trips recorded for 20192016.⁵</p> <p>In 2019, Amtrak operated a total of four daily roundtrips along Empire Corridor West. Amtrak operates three daily round trips to Niagara Falls (Empire Service), with one continuing on to Toronto (Maple Leaf Service). The other daily service trip continues from Buffalo-Depew Station to Chicago (Lake Shore Limited). In addition to these four trips, two trips offer service to Schenectady, one (the Adirondack Service) continuing to Montreal and one (the Ethan Allen Express) continuing to Rutland, Vermont. Thus, the Empire Corridor serves as a trunk rail line from which regional branches operate daily to Vermont (Rutland), Canada (Toronto and Montreal), and Chicago, creating a robust and economically important rail passenger network over a significant service area.</p>	Updated for 2019 ridership and project year. Changes made globally. Added discussion of the national and regional importance of Empire Corridor. Added discussion of regional services.

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8	p. 3	⁵ Although the Tier 1 Final EIS forecast one million additional riders over 20 years in response to a 90-minute total travel time savings, this SDP recognizes a 25-year period and slightly greater travel time benefits (94 minutes), including four minutes of additional time savings from double-tracking the Schenectady-Albany single track segment that was not considered in the EIS. Applying travel and cost elasticities from the demand forecasting model to the additional four minutes of travel time benefit generates 83,000 more riders, for a total of 1.083 million one-way trips.	⁵ Although the The Tier 1 Final EIS forecast one million additional riders over 20 years in response to a 90-minute total travel time savings, this SDP recognizes a 25-year period. The 1.6 million Amtrak 2019 ridership estimate include trips to Toronto (on the Maple Leaf Service). and slightly greater travel time benefits (94 minutes); including four minutes of additional time savings from double-tracking the Schenectady-Albany single track segment that was not considered in the EIS. Applying travel and cost elasticities from the demand forecasting model to the additional four minutes of travel time benefit generates 83,000 more riders, for a total of 1.083 1 million one-way trips.	Updated forecast for timeframe and ridership. Changes made globally.

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9	p. 3	By speeding trains and shifting more than one million travelers to rail from other modes, the program will reduce locomotive fuel consumption by over 500,000 gallons of diesel fuel, eliminate or avoid 67 million pounds of air pollutant and greenhouse gas emissions, conserve nearly 400,000 billion British Thermal Units (BTUs) of energy as travelers switch to more energy-efficient rail services, and avoid 117 roadway accidents. Over its 25-year implementation period, the program investments will create 55,676-years of employment, and the direct hiring of 150 additional rail system workers.	By speeding trains increasing train speeds and shifting more than one million travelers to rail from other modes, the program will reduce locomotive fuel consumption by over 500,000 gallons of diesel fuel, eliminate or avoid 67 million pounds of air pollutant and greenhouse gas emissions, conserve nearly 400,000 billion British Thermal Units (BTUs) of energy as travelers switch to more energy-efficient rail services, and avoid 117 roadway accidents. Over its 25-year implementation period, the program investments will create 55,676 68,048 -years of employment, and the direct hiring of 150 210 additional rail system workers.	Corrected grammar and revised employment based on higher program costs.
10	p. 4 and 108	Exhibit ES-1 and Exhibit 9-1: Benefits of High-Speed Rail Empire Corridor Program: Travel Time Savings per Train Each Year, Summed over 5-year periods (minutes/Cumulative Totals) Years 1-5 (10/10), Years 6-10 (36/46), Years 11-15 (14/60), Years 16-20 (10/70), Years 21-25 (24/94)	Exhibit ES-1: Benefits of High-Speed Rail Empire Corridor Program: Travel Time Savings per Train Each Year, Summed over 5-year periods (minutes/Cumulative Totals) Years 1-5 (10/10), Years 6-10 (36/46) (35/45) , Years 11-15 (14/60) (13/58) , Years 16-20 (10/70) (9/67) , Years 21-25 (24/94) (23/90)	Adjusted travel time savings to be more conservative.

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#	Page #	Original SDP Text	Revised SDP Text	Reason for Changes
11	pp. 4 and 108	Exhibit ES-1 and Exhibit 9-1: Benefits of High-Speed Rail Empire Corridor Program: Total Minutes of Delay Saved Each Year, Summed over 5-Year Periods (minutes/Cumulative Totals) Years 1-5 (35,272/35,272), Years 6-10 (10,120/45,392), Years 11-15 (7,328/52,720), Years 16-20 (14,657/67,377), Years 21-25 (18,490/85,867)	Exhibit ES-1: Benefits of High-Speed Rail Empire Corridor Program: Total Minutes of Delay Saved Each Year, Summed over 5-Year Periods (minutes/Cumulative Totals) Years 1-5 (35,272/35,272), Years 6-10 (10,120/45,392) (9,831/44,095) , Years 11-15 (7,328/52,720) (7,119/51,214) , Years 16-20 (14,657/67,377) (14,238/65,452) , Years 21-25 (18,490/85,867) (17,692/83,414)	Adjusted travel time savings to be more conservative.
12	pp. 5 and 110	Exhibit ES-1 and Exhibit 9-1: Benefits of High-Speed Rail Empire Corridor Program: Job Creation Each Year, Summed over 5 Year Periods (job-years/Cumulative Totals) Years 1-5 (9,419/9,419), Years 6-10 (10,134/19,552), Years 11-15 (11,541/31,093), Years 16-20 (12,190/43,283), Years 21-25 (12,494/55,777)	Exhibit ES-1: Benefits of High-Speed Rail Empire Corridor Program: Job Creation Each Year, Summed over 5 Year Periods (job-years/Cumulative Totals) Years 1-5 (9,419/9,419) (11,491/11,491) , Years 6-10 (10,134/19,552) (12,363/23,853) , Years 11-15 (11,541/31,093) (14,080/37,933) , Years 16-20 (12,190/43,283) (14,872/52,805) , Years 21-25 (12,494/55,777) (15,243/68,048)	Adjusted job creation based on higher program costs.

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13	pp. 6 and 110	Exhibit ES-1 and Exhibit 9-1: Benefits of High-Speed Rail Empire Corridor Program: Direct Employment Each Year, Summed over 5 Year Periods (rail system jobs/Cumulative Totals) Years 1-5 (24/24), Years 6-10 (42/66), Years 11-15 (41/97), Years 16-20 (29/126118), Years 21-25 (47/173)	Exhibit ES-1: Benefits of High-Speed Rail Empire Corridor Program: Direct Employment Each Year, Summed over 5 Year Periods (rail system jobs/Cumulative Totals) Years 1-5 (24/24) (27/27) , Years 6-10 (42/66) (47/74) , Years 11-15 (41/97) (43/117) , Years 16-20 (29/126118) (41/158) , Years 21-25 (47/173) (52/210)	Adjusted staffing based on projects proposed.
14	p. 6	Key (for Exhibit ES-1: Benefits of High-Speed Rail Empire Corridor Program)	Key (for Exhibit ES-1: Benefits of High-Speed Rail Empire Corridor Program) Note: Refer to Key to Exhibit 9-1 in Section 9.3 for further explanation of benefits and methodology.	Refer to Key for Exhibit 9-1.

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15	p. 11	The Federal Railroad Administration (FRA) and the New York State Department of Transportation (NYSDOT) are completing a Tier 1 Environmental Impact Statement (EIS) that evaluates options for improving intercity passenger rail services along the 464-mile Empire Corridor between Pennsylvania (Penn) Station in New York City and Niagara Falls Station in Niagara Falls, New York. In 2010, NYSDOT received a grant from the FRA with which to develop alternatives for improving the Empire Corridor rail system, to conduct the evaluation of these alternatives pursuant to the National Environmental Policy Act (NEPA), and to prepare this Service Development Plan (SDP) for the selected alternative to describe its feasibility, costs, sources of funding, and operation.	The Federal Railroad Administration (FRA) and the New York State Department of Transportation (NYSDOT) are completing a Tier 1 Final Environmental Impact Statement (EIS) that evaluates options for improving intercity passenger rail services along the 464-mile Empire Corridor between Pennsylvania (Penn) Station in New York City and Niagara Falls Station in Niagara Falls, New York. In December 1998, the U.S. Secretary of Transportation announced the official designation of the TEA-21-authorized Empire Corridor as a high-speed rail corridor. In 2010, NYSDOT received a grant from the FRA with which to develop alternatives for improving the Empire Corridor rail system, to conduct the evaluation of these alternatives pursuant to the National Environmental Policy Act (NEPA), and to prepare this Service Development Plan (SDP) for the selected alternative to describe its feasibility, costs, sources of funding, and operation.	Identified federal high-speed rail designation.
16	p. 11	The implementation plan for the SDP requires the generation of a prioritized capital program, a ten-year financial plan, institutional and stakeholder arrangements and agreements, and a program management plan.	The implementation plan for the SDP requires the generation of a prioritized capital program, a multi-ten-year -financial plan, institutional and stakeholder arrangements and agreements, and a program management plan.	Clarified timeframe for financial plan.

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17	p. 11	In the past 20 years, annual ridership on intercity passenger trains traveling on the Empire Corridor has grown by over 500,000 passengers, to 1.6 million in 2016.	In the past 20 years, annual ridership on intercity passenger trains traveling on the Empire Corridor has grown by over 500,000 passengers, to 1.6 million in 2019 ²⁰¹⁶ . ¹³ ¹³ The 2019 Amtrak ridership includes trips to Toronto (on the Maple Leaf Service). The total Amtrak ridership including all of the other services (Lake Shore Limited, Adirondack, Ethan Allen Express) in 2019 was 2.1 million.	Clarified Amtrak ridership statistics and provided ridership updates for 2019.
18	p. 11	This rail network helps people in 11 counties live and work with less dependence on automobiles and more time for business and families, lower levels of traffic congestion, less air pollution, in denser and more walkable towns and cities oriented around train stations rather than highway interchanges.	This rail network helps people in 11 counties live and work with less dependence on automobiles and more time for business and families, lower levels of traffic congestion, less air pollution, in denser and more walkable towns and cities oriented around train stations rather than highway interchanges. The nine Metropolitan Planning Organizations along the route account for approximately 90 percent of the state's total population and employment and form the bulk of the high-speed rail ridership market.	Clarified potential market area for high speed rail ridership for Empire Corridor.
19	p. 12	Recent investments for improvements at Rochester, Albany, Niagara Falls, and Schenectady are already freeing passenger rail service from freight rail conflicts that have resulted in years of unreliable and slow service.	Recent investments for improvements at Rochester, Albany, Buffalo , Niagara Falls, and Schenectady are already freeing passenger rail service from freight rail conflicts that have resulted in years of unreliable and slow service.	Updated station construction to include investments at Buffalo-Exchange Street Station and Buffalo-Depew Station.

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20	p. 12	This SDP outlines such a program. After five years of careful analysis, NYSDOT has identified a suite of improvements that can be built with available and anticipated funding without interfering with existing passenger and freight services. It will confer gradual and continuing benefits to both passenger and freight services sharing the busy Empire Corridor section between Albany and Niagara. In so doing, it will bolster center-city renaissance while supporting key business and educational institutions, and provide increasingly essential linkages between upstate towns, and the capital and New York City.	This SDP outlines such a program. After five years of careful analysis of investments in intercity passenger rail, which was addressed in the Tier 1 Final Environmental Impact Statement (EIS). After careful analysis of options and impacts in the Tier 1 Final EIS, NYSDOT has identified a suite of improvements that can be built with available and anticipated funding without interfering with existing passenger and freight services. # These will confer gradual and continuing benefits to both passenger and freight services sharing the busy Empire Corridor section between Albany and Niagara Falls . In so doing, it-they will bolster center-city renaissance while supporting key business and educational institutions, and provide increasingly essential improve linkages between upstate towns and, the State capital (Albany), and New York City.	Corrected and clarified references.
21	p. 13	In response, ridership is anticipated to grow significantly, from the 1.6 million current Empire Corridor passengers to 2.6 million after implementation of the full program. ¹³	In response, ridership is anticipated to grow significantly, from the 1.6 million current Empire Corridor passengers to 2.6 2.7 million after implementation upon completion of the full program. ¹⁴	Updated ridership for full implementation of the program. Change made globally.

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22	p. 13	¹³ Although the Tier 1 Final EIS forecast 1 million additional riders over 20 years, this SDP recognizes a 25-year growth period, and slightly greater travel time benefits (94 minutes rather than 90 minutes as per the EIS), resulting in slightly more ridership (1.1 million).	¹⁴ Although the Tier 1 Final EIS forecast 1 million additional riders over 20 years, this SDP recognizes a 25-year growth period, and slightly greater travel time benefits (94 minutes rather than 90 minutes as per the EIS), resulting in slightly more ridership (1.1 million). The Tier 1 Final EIS forecast 1 million additional riders over 20 years, this SDP recognizes a 25-year growth period, and slightly greater travel time benefits (94 minutes rather than 90 minutes as per the EIS), resulting in slightly more ridership (1.1 million).	Clarified travel time savings benefits. Change made globally.
23	p. 13	To provide the capital improvements, equipment and services proposed for the Empire Corridor in this report, 173 permanent jobs would be created to operate the rail system, and some 55,777 job-years of additional employment created in constructing and operating it over a 25-year implementation period. ¹⁵ This economic infusion will be multiplied as dollars invested in the rail system play through upstate economies, fostering greater economic activity broadly beneficial to the entire Empire Corridor. Revitalizing Communities In addition to speeding main-line passenger and freight rail services, the program fosters improved intermodal connections in upstate cities.	To provide the capital improvements, equipment and services proposed for the Empire Corridor in this report, 173-210 permanent jobs would be created to operate the rail system, and some 55,777-68,048 job-years of additional employment created in constructing and operating it program construction and operation over a 25-year implementation period. ¹⁵ This economic infusion will be multiplied as dollars invested in the rail system play through rejuvenate upstate economies, fostering greater economic activity broadly beneficial to the entire Empire Corridor. Revitalizing Communities In addition to speeding increasing train speeds for main-line passenger and freight rail services, the program fosters improved intermodal connections in upstate cities.	Clarification and revised employment estimates based on updated project listing and revised project costs. Made these changes globally.

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24	p. 13	¹⁴ The long-term impact of 173 permanent rail system jobs continues past the 25-year analysis horizon. Construction jobs – and their multiplier effect on local economies – dissipate after completion of the program.	¹⁵ The long-term impact of 173–210 permanent rail system jobs continues past the 25-year analysis horizon. Construction jobs – and their multiplier effect on local economies – dissipate after completion of the program.	Revised staffing based on updated projects.
25	p. 13	Rail is the most space and energy efficient means of moving people and goods, enjoys standard technologies long proven in service and reduces air pollution and noise generated through other means of travel. Overall, investments in rail continue to repay significant environmental and economic dividends measured in decades, propelling economic growth while preserving communities and the region from the environmental degradation that results from dependence on automobiles.	Rail is the most space and energy efficient means of moving people and goods, enjoys . Rail transportation employs standard technologies long proven in service and reduces air pollution and noise generated through other means of travel. Overall, investments in rail continue to repay significant environmental and economic dividends measured continuing to accrue benefits (e.g., reduction in greenhouse gas emissions) over decades, propelling economic growth while preserving communities and the region from the environmental degradation that results from dependence on automobiles.	Clarified language.
26	p. 16	To date, NYSDOT has already accomplished many of these projects, setting the stage for implementation of the Preferred Alternative that is the subject of this SDP.	To date, NYSDOT has completed all already accomplished many of these projects, setting the stage for implementation of the Preferred Alternative that is the subject of this SDP.	Revised to reflect completion of Base projects.

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27	p. 16	<p>Among the improvements NYSDOT has completed are the following (project designations key to NYSDOT project lists)</p> <ul style="list-style-type: none"> ▪ Hudson Line Signal Reliability; ES-3 ▪ Hudson Line Highway-Rail Grade Crossing Safety Improvements; ES-11 ▪ Albany-Rensselaer Station Fourth Track Capacity Improvements; ES-9, and ▪ Niagara Falls International Railway Station and Intermodal Transportation Center – New Intermodal Transportation Center; EW-13. <p>In addition, projects funded and in construction include:</p> <ul style="list-style-type: none"> ▪ Albany – Schenectady Double Track; ES-10 	<p>Among the improvements NYSDOT has completed are the following (project designations key to NYSDOT project lists)</p> <ul style="list-style-type: none"> ▪ Hudson Line Signal Reliability; ES-3 ▪ Hudson Line Highway-Rail Grade Crossing Safety Improvements; ES-1 ▪ Albany-Rensselaer Station Fourth Track Capacity Improvements; ES-9, and ▪ Niagara Falls International Railway Station and Intermodal Transportation Center – New Intermodal Transportation Center; EW-13. <p>In addition, projects funded and in construction include:</p> <ul style="list-style-type: none"> ▪ Albany – Schenectady Double Track; ES-10 	Revised to reflect completion of Base projects.
28	p. 17	<p>As such, NYSDOT's efforts since 2015 set the stage for the next wave of improvements needed to further upgrade passengers' experience and increase ridership.</p>	<p>As such, NYSDOT's efforts since 2015 to date set the stage for the next wave of improvements needed to further upgrade improve the speed of service, improve passengers' experience, and increase ridership.</p>	Updated for current conditions.
29	p. 17	Albany-Rensselaer and Station and Track Improvements	Albany-Rensselaer and Station Track Improvements and Other Base Station Projects	Clarified content of section.

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30	p. 17	Exhibit 2-4 shows the new Albany Rensselaer Station with the recently completed improvements to the Interlocking CP142 and installation of the fourth station track.	Exhibit 2-4 shows the new Albany-Rensselaer Station with the recently completed improvements to the Interlocking CP142 and installation of the fourth station track.	Updated for current conditions.
31	p. 18	Another station project underway at Schenectady will provide a new station replacing a facility nearing the end of investment life. This new station at Schenectady will complement other improvements in the city with the opening of new tourist and art attractions in the area near the station location.	Another Other station projects underway-completed at Schenectady and Buffalo-Exchange Street Stations will provide a -new stations replacing a -facilities y nearing the end of their investment life. This - These new stations in at Schenectady and Buffalo will complement other improvements in the cities y with the opening of new tourist and art attractions in the areas s near the station locations s .	Provided station construction updates.
32	p. 18	Exhibit 2-6-New station recently completed at Rochester. A new Rochester station was recently completed... Also at Syracuse, interlocking and signal projects now under development will help improve operations for both passenger and freight trains. The Rochester station is shown in Exhibit 2-6.	Added to the Addenda new image for: Exhibit 2-6-New, recently completed station Also at the Syracuse Station , interlocking and signal projects now under development will help improve operations for both passenger and freight trains. The Rochester station is shown in Exhibit 2-6.	Provided recent image of Rochester Station in Addendum and modified station/exhibit references.

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33	p. 20	The route between New York City and Albany-Rensselaer, offering 13 daily round-trips, is the third busiest intercity rail route in the nation. The segment between Albany and Niagara Falls is owned by CSXT, a freight rail company, which allows Amtrak to run passenger service on shared tracks by contract with NYSDOT.	The route between New York City and Albany-Rensselaer, offering 13 daily round-trips, is the third busiest intercity rail route in the nation. With the exception of one short (6.8-mile) segment owned by Amtrak west of the Schenectady Station, between Albany the station and Hoffmans, the segment between Poughkeepsie and Niagara Falls is predominantly owned by CSXT, a freight rail company, which allows Amtrak to run passenger service on shared tracks by contract with NYSDOT.	Clarified.

#	Page #	Original SDP Text	Revised SDP Text	Reason for Changes
34	p. 21	<p>The Ethan Allen train runs northeast beyond Albany to Rutland, Vt. Trains #63 and #64 (the “Maple Leaf”) are operated by VIA RAIL Canada from Niagara Falls, New York to Toronto, with U.S. and Canadian rail crews switching places at the border. Trains #68 and #69 (the “Adirondack”) are continuations of two Empire South trains that run north beyond Albany to Montreal, Canada, with the U.S. crews operating the trains over the entire route. The Lake Shore Limited runs west past Buffalo to Cleveland and Chicago, and east past Albany to Boston, Massachusetts. These services were included as part of the network simulation for the program, to ensure that the proposed train improvements are feasible, that the program can be delivered as intended, and that it will meet program objectives. These trains have also been recognized in discussions of ridership in the EIS and this SDP.</p>	<p>The Ethan Allen train (Trains #290-293, #295-296) runs northeast beyond Albany to Rutland, Vermont-Vt. Trains #63 and #64 (the “Maple Leaf”) are operated by VIA RAIL Canada from Niagara Falls, New York to Toronto, with U.S. and Canadian rail crews switching places at the border. Trains #68 and #69 (the “Adirondack”) are continuations of two Empire South trains that run north beyond Albany to Montreal, Canada, with the U.S. crews operating the trains over the entire route. The Lake Shore Limited (Trains #48 and #49) runs west past Buffalo to Cleveland and Chicago, and east past Albany to Boston, Massachusetts. These services were included as part of the network simulation for the program, to ensure that the proposed train improvements are feasible, that the program can be delivered as intended, and that it will meet program objectives. These trains have also been recognized in discussions of ridership in the Tier 1 EIS and this SDP.</p> <p>In addition to these services, a pilot service for the Berkshire Flyer operated on weekends in the summer of 2022 from New York City to Pittsfield, Massachusetts. This seasonal pilot program, sponsored by MassDOT, in cooperation with NYSDOT, is expected to continue in the summer of 2023.</p> <p>NYSDOT is currently planning improvements to the Syracuse Station for provide improved access to the New York State Fairgrounds Stop. This stop also operates on a seasonal basis, depending on events at the Fairgrounds.</p>	<p>Clarified train numbers for Ethan Allen and Lake Shore Limited routes for consistency. Updated discussion of regional services, as well as recent updates for season services.</p>

High Speed Rail Empire Corridor Service Development Plan Errata

#	Page #	Original SDP Text	Revised SDP Text	Reason for Changes
35	p. 22	The geographic distribution of ridership on the Empire Corridor is shown in Exhibit 3-2. The majority of the route's ridership is concentrated between NYC and Albany. The route between Albany-Rensselaer and New York City is the third busiest rail route in the nation, and is used by Empire Corridor trains as well as trains serving Montreal and Vermont. Ridership on the Empire Corridor has been growing steadily for the past decade, reaching 1.6 million passengers in 2016. As NYSDOT improves Empire Corridor infrastructure and services, Corridor ridership will continue to grow in response to faster trips and improved reliability.	The geographic distribution of ridership (2019) on the Empire Corridor is shown in Exhibit 3-2. The majority of the route's ridership is concentrated between NYC and Albany. The route between Albany-Rensselaer and New York City is the third busiest rail route in the nation, and is used by Empire Corridor trains as well as trains serving Boston (on the Lake Shore Limited), Montreal (on the Adirondack), and Vermont (on the Ethan Allen Express). The route west of Albany to Buffalo is used by trains serving destinations to the west, such as Cleveland, Toledo, and Chicago (Lake Shore Limited West) and trains traveling to Niagara Falls can continue on to Toronto (Maple Leaf). Ridership on the Empire Corridor has been growing steadily for the past decade, reaching 1.6 million passengers in 20192046. This Amtrak estimate includes Albany-Niagara Falls Toronto trips which includes trips on the Maple Leaf Service. The other services along the Adirondack, Ethan Allen Express, and Lake Shore Limited totaled approximately 526,000 trips, for a total of 2.1 million passengers traveling on Empire Corridor in 2019. Exhibit 3-2 shows the relative proportion of these services. As NYSDOT improves Empire Corridor infrastructure and services, Corridor ridership will is expected to continue to grow in response to faster trips and improved reliability.	Provided ridership updates for 2019, clarified ridership on other Amtrak Services using Empire Corridor, and add updated Exhibit 3-2 (in Addenda).
36	p. 22	Exhibit 3-2 Empire Corridor Ridership by Segment	Revised Exhibit 3-2, Empire Corridor Ridership by Segment.	Updated Exhibit 3-2.

High Speed Rail Empire Corridor Service Development Plan Errata

#	Page #	Original SDP Text	Revised SDP Text	Reason for Changes
37	p. 23	<p>To comply with the National Environmental Policy Act (NEPA), beginning in 2009, NYSDOT and FRA conducted a NEPA Scoping process and then developed a project Purpose and Need Statement and a series of higher-speed Empire Corridor rail alternatives that could provide improved Empire Corridor service, all documented in a Tier 1 Draft Environmental Impact Statement (Tier 1 Draft EIS circulated in 2014).</p> <p>Formal public hearings were held in six cities across the state to explain the program and gather public input. Following the public hearings, a <i>Response to Comments</i> document was prepared. Finally, based on public comments received and the analytical findings, a Preferred Alternative (PA) was selected by NYSDOT. This PA is proposed in a Final Environmental Impact Statement (Final EIS) that is being published in parallel with this SDP.</p>	<p>To comply with the National Environmental Policy Act (NEPA), beginning in 2009, NYSDOT and FRA conducted a NEPA Scoping process and then developed a project Purpose and Need Statement and a series of higher-speed Empire Corridor rail alternatives that could provide improved Empire Corridor service, all documented in athe Tier 1 Draft Environmental Impact Statement (Tier 1 Draft EIS circulated in 2014).</p> <p>Formal public hearings were held in six cities across the state to explain the program and gather public input. Following the public hearings, a <i>Response to Comments</i> document was prepared (included as Appendix K of the Tier 1 Final EIS). Finally, based on public comments received and the analytical findings, a Preferred Alternative (PA) was selected by NYSDOT. This PA is proposed in the Tier 1 Final Environmental Impact Statement (Final EIS) that is being published in parallel with this SDP.</p>	Clarified NEPA process and references to Appendix K.

High Speed Rail Empire Corridor Service Development Plan Errata

#	Page #	Original SDP Text	Revised SDP Text	Reason for Changes
38	p. 23	<ul style="list-style-type: none"> ▪ Base Alternative: The slowest of the alternatives, the Base Alternative would constitute the current system improved through a series of basic upgrades that would be completed whether the Empire Corridor program advances or not. (Many of these have been completed at this writing; see Chapter 2 of this report.) 	<ul style="list-style-type: none"> ▪ Base Alternative: The slowest of the alternatives, the Base Alternative would constitute the current system improved through a series of basic upgrades that would be completed whether the Empire Corridor program advances or not. (Many All of these have been completed at this writing; see Chapter 2 of this report.) 	Updated status of Base Alternative projects.
39	p. 24	<ul style="list-style-type: none"> ▪ A complete renovation of the station building at Schenectady and other improvements: EW-01 (Construction Underway) ▪ Station improvements at Syracuse to reduce congestion between passenger and freight trains: EW-6 (Construction Underway) 	<ul style="list-style-type: none"> ▪ A complete renovation of the station building at Schenectady and other improvements: EW-01 (Completed Construction Underway) ▪ Station improvements at Syracuse to reduce congestion between passenger and freight trains: EW-6 (Completed Construction Underway) 	Updated status of Base Alternative project construction.
40	p. 26	Alternative 90B allows 90 mph operation over most of the Empire Corridor West right of way and includes all of the improvements in Alternative 90A .	Alternative 90B allows 90 mph operation over most of the Empire Corridor West right-of-way and includes all of the improvements in Alternative 90A .	Clarified that Alternative 90B includes 90A improvements.

High Speed Rail Empire Corridor Service Development Plan Errata

#	Page #	Original SDP Text	Revised SDP Text	Reason for Changes
41	p. 27	Overall, by the end of the fifth year of the program, all Empire Capital District Connection trains will save 10-15 minutes from the current 2-½ hour trip time between Albany-Rensselaer and New York City; trip time for selected express trains would be reduced to 2 hours.	Overall, by the end of the fifth year of the program, all Empire Capital District Connection trains will save 10-15 minutes from the current 2-½ hour trip time between Albany-Rensselaer and New York City; trip time for selected express trains would be reduced to 2-¼ hours.	Clarified trip times.
42	p. 31	The Empire Corridor Program is built around an expectation of \$240-\$250 million annually for capital project design and construction, of which 80% will be sought from federal sources, and the balance provided by local, state and private investments.	The Empire Corridor Program is built around an expectation of \$240-\$250 \$350 million annually for capital project design and construction, of which 80% will be sought from federal sources, and the balance provided by local, state and private investments.	Updated program annual cost. Change made globally.
43	p. 33	This forecast projected 1.083 million additional one-way trips over the entire Empire Corridor upon completion of all improvements and attainment of speed, travel time and reliability goals. ²³ ²³ High Speed Rail Empire Corridor Program, Tier 1 Draft Environmental Impact Statement, Chapter 5: Section 5.6, Exhibit 5-13	This forecast projected 1 1.083 -million additional one-way trips over the entire Empire Corridor upon completion of all improvements and attainment of speed, travel time and reliability goals. ²³ ²³ High Speed Rail Empire Corridor Program, Tier 1 Draft Final Environmental Impact Statement, Chapter 5: Section 5.6, Exhibit 5-13	Clarified ridership and updated reference to the Tier 1 Final EIS. These changes were made globally.

High Speed Rail Empire Corridor Service Development Plan Errata

#	Page #	Original SDP Text	Revised SDP Text	Reason for Changes
44	p. 36	Other Empire Corridor South trains will see a 15-minute travel time reduction between New York City and Albany during the first five years, while the travel time for Empire Corridor West trains between Albany and Niagara Falls will shrink from 6 hours to 4-3/4 hours, a reduction of one hour and fifteen minutes.	Other Empire Corridor South trains will see up to a 15-minute travel time reduction between New York City and Albany during the first five years, while the travel time for Empire Corridor West trains between Albany and Niagara Falls will shrink from 6 hours to 4-3/4 hours, a reduction of up to one hour and fifteen minutes.	Clarified travel time savings.
45	p. 36	<ul style="list-style-type: none"> Operating certain trains with a 2-hour trip time between Albany-Rensselaer and New York City. All other Empire Corridor South trains will achieve a 15-minute trip time reduction as part of an overall trip time reduction of 90 minutes over the entire run from Niagara Falls to Penn Station New York City. Trains from Empire Corridor West operating through Albany and into the Hudson Valley will be able to achieve greater trip time reductions, at least 75 minutes and potentially somewhat more. 	Operating certain trains with a 2-hour trip time between Albany-Rensselaer and New York City. All other Empire Corridor South trains will achieve up to a 15-minute trip time reduction as part of an overall trip time reduction of 90 minutes over the entire run from Niagara Falls to Penn Station New York City. Trains from Empire Corridor West operating through Albany and into the Hudson Valley will be able to achieve greater trip time reductions, up to at least 75 minutes and potentially somewhat more.	Clarified travel time reductions.
46	p. 37	C-2 Achieve a 15-minute trip time reduction for trains operating between New York City and Albany-Rensselaer;	C-2 Achieve up to a 15-minute trip time reduction for trains operating between New York City and Albany-Rensselaer;	Clarified travel time reductions.

High Speed Rail Empire Corridor Service Development Plan Errata

#	Page #	Original SDP Text	Revised SDP Text	Reason for Changes
47	p. 37	The track arrangements with notations of improvements in speeds for the High Speed Rail Empire Corridor Program EIS are included as Appendix B.	The track arrangements with notations of improvements in speeds for the High Speed Rail Empire Corridor Program Tier 1 EIS are included as Appendix B-A of the Tier 1 EIS.	Clarified references to the Tier 1 EIS. Change made globally.
48	p. 37	As noted in Section 4.1, these include some recent improvements sponsored (and, in all cases, already completed or in currently construction) by NYSDOT.	As noted in Section 4.1, these include some recent improvements sponsored (and, in some-all cases, already completed or in currently construction) by NYSDOT.	Clarified status of Base Alternative projects. Change made globally.
49	p. 38	The track configuration required for the Preferred Alternative is shown in Volume 2 of the High Speed Rail Empire Corridor Tier 1 Program EIS, and is included for reference as Appendix B to this SDP. The required supporting infrastructure improvements for Empire Corridor South, as part of the Empire Capital District Connection, are outlined in Exhibit 6-2.	The track configuration required for the Preferred Alternative is shown in Volume 2/ Appendix A of the High Speed Rail Empire Corridor Tier 1 Program EIS and is included for reference as Appendix B to this SDP . The required supporting infrastructure improvements for Empire Corridor South, as part of the Empire Capital District Connection and as described in the Tier 1 EIS , are outlined in Exhibit 6-2.	Clarified references.
50	p. 43	C-2 Schedule adjusted for all trains in the Hudson Valley, to achieve trip time reduction <i>15-minute trip time reduction for most trains operating between New York City and Albany-Rensselaer</i>	C-2 Schedule adjusted for all trains in the Hudson Valley, to achieve trip time reduction <i>Up to a 15-minute trip time reduction for most trains operating between New York City and Albany-Rensselaer</i>	

High Speed Rail Empire Corridor Service Development Plan Errata

#	Page #	Original SDP Text	Revised SDP Text	Reason for Changes
51	p. 50	Exhibit 6-9, Preferred Alternative Equipment Utilization Assignments	In Exhibit 6-9, adjusted timeline for equipment utilization assignment for Train # 237, consistent with the train schedule.	
52	p. 51	Crew assignments are established with the process outlined in Exhibit 6-10, Days of Operation, for each service are given in Exhibit 6-11.	Crew assignments we are established with the process outlined in Exhibit 6-10, Days of Operation, and the trains and proposed weekly schedule for each service are given in Exhibit 6-11.	Clarified content of Exhibit 6-11.
53	p. 51	Organized within the parameters of the existing labor agreements;	The schedule is organized Organized within the parameters of the existing labor agreements;	Clarified content.
54	p. 51	Consistent with the Federal "Railroad Hours of Service Law;"	The schedule is consistent Consistent with the Federal "Railroad Hours of Service Law;"	Clarified content.
55	p. 51	Couplets are organized for outlying terminals "first-in & first-out" to minimize total hours on duty for crews;	The couplets Couplets are organized for outlying terminals "first-in & and first-out" to minimize total hours on duty for crews;	Clarified content.
56	p. 51	The crew couplets integrate the increased service with existing trains to maximize crew efficiencies. New trains are shown in BLUE BOLD in the crew couplet tables.	The crew couplets integrate the increased service with existing trains to maximize crew efficiencies. New trains are shown in BLUE BOLD in the crew couplet tables, shown in Exhibit 6-13.	Clarified reference.

High Speed Rail Empire Corridor Service Development Plan Errata

#	Page #	Original SDP Text	Revised SDP Text	Reason for Changes
57	p. 61	Constructed Intermodal Facility and NYSDOT is currently supporting an analysis to reduce congestion for freight and rail passenger service in the Syracuse Terminal area of the CSXT – Syracuse Terminal. NYSDOT is currently planning improvements for the station stop at the New York State Fairgrounds.	Constructed Intermodal Facility and NYSDOT is currently supporting an analysis to reduce congestion for freight and rail passenger service in the Syracuse Terminal area of the CSXT – Syracuse Terminal. NYSDOT is currently Completed planning improvements for the station stop at the New York State Fairgrounds.	Updated status of project construction.
58	p. 61	Completion is nearing for a new station building that will have a high-level center platform, and an expanded facility for passenger train operations in Rochester.	Completion is nearing for Completed a new station building that will have with a high-level center platform, and an expanded facility for passenger train operations in Rochester .	Updated status of project construction.
59	p. 61	NYSDOT is working with the City of Buffalo and other stakeholders to plan a new station that will provide better connections to the local transit system and support economic growth in the downtown area.	NYSDOT is working worked with the City of Buffalo and other stakeholders to plan rebuild a new station that will provide better connections to the local transit system and support downtown economic growth in the downtown area .	Updated status of project construction.
60	p. 62	NYSDOT sponsored construction of a new station is underway with completion expected in 2018.	NYSDOT sponsored construction of Completed a new station is underway with completion expected in 2018 .	Updated status of Schenectady Station project construction.

High Speed Rail Empire Corridor Service Development Plan Errata

#	Page #	Original SDP Text	Revised SDP Text	Reason for Changes
61	p. 62	<p>NYSDOT recently completed:</p> <ul style="list-style-type: none"> ▪ Installation of a fourth station track; ▪ Platforms lengthened to accommodate 10 car trains. 	<p>NYSDOT recently Completed:</p> <ul style="list-style-type: none"> ▪ Installation of a fourth station track; ▪ Platforms lengthened to accommodate 10 car trains. 	Updated status of Albany-Rensselaer Station project construction.
62	p. 62	The “Moynihan Station” project currently underway, is supported by NYSDOT and other stakeholders to transform the former Farley Post Office Building on 8th Avenue. It will provide a new entrance and passenger amenities and increase station capacity for both intercity and commuter trains.	The “Moynihan Station” project currently underway, is supported by NYSDOT and other stakeholders, to transform transformed the former Farley Post Office Building on 8th Avenue. It will provide provides a new entrance and passenger amenities and increase increases station capacity for both intercity and commuter trains	Updated status of project construction.
63	p. 63	New station will feature center-island platform that will provide for a barrier-free ADA accessible facility.	New station will feature center Center -island high-level platform that will provide for a barrier-free ADA accessible facility.	Updated status of Rochester Station project construction.
64	p. 63	Station currently has a low-level platform with Wheel-chair Lift available.	Station currently has a low-level platform with Wheel-chair Lift available. High-level platform with barrier-free access for ADA accessibility. Wheelchairs are available.	Updated status of Buffalo-Exchange Street Station project construction.
65	p. 63	New station features a barrier-free high-level platform providing an ADA-accessible facility.	New station features a barrier-free high-level platform providing an ADA-accessible facility. High-level platform with barrier-free access for ADA accessibility. Wheelchairs are available.	Updated status of Niagara Falls Station project construction.

High Speed Rail Empire Corridor Service Development Plan Errata

#	Page #	Original SDP Text	Revised SDP Text	Reason for Changes
66	p. 64	There will be a new low level platform with two platform edges. A wheel chair lift is available. The new platform will also have a redundant egress.	There will be a new Low -level platform with two platform edges. A wheel chair lift is available. The new platform will also have has a redundant egress.	Updated status of Schenectady Station project construction.
67	p. 65	200 Long Term Parking Spaces	Short Term Parking Spaces Available 200 Long Term Parking Spaces	Updated Utica Station entry to current conditions.
68	p. 65	5 Long Term Parking Spaces	Short Term Parking Spaces Available 5 Long Term Parking Spaces	Updated Rome Station entry to current conditions.
69	p. 65	40 Long Term Parking Spaces	40-13 Long Term Parking Spaces 215 Long Term Parking Spaces	Updated Rochester Station entry to current conditions.
70	p. 65	10 Short Term Parking Spaces 10 Long Term Parking Spaces	10 Short Term Parking Spaces 40 75 Long Term Parking Spaces	Updated Buffalo-Exchange Street Station entry to current conditions.
71	p. 66	40 Short Term Parking Spaces 40 Long Term Parking Spaces	40-150 Short Term Parking Spaces 40 Long Term Parking Spaces	Updated Saratoga Springs Station entry to current conditions.
72	p. 66	Currently No Short Term Parking Spaces 20 Long Term Parking Spaces	Currently No Short Term Parking Spaces 20 Long Term 190 Parking Spaces	Updated Schenectady Station entry to current conditions.
73	p. 66	10 Short Term Parking Spaces 50 Long Term Parking Spaces	Garage parking provides 600 40 Short Term Parking Spaces 50 Long Term Parking Spaces	Updated Poughkeepsie Station entry to current conditions.

High Speed Rail Empire Corridor Service Development Plan Errata

#	Page #	Original SDP Text	Revised SDP Text	Reason for Changes
74	p. 66	250 Long Term Parking Spaces	Garage parking provides 600 spaces 250 150 Long Term Parking Spaces	Updated Yonkers Station entry to current conditions.
75	p. 67	Study currently underway to relocate the station closer to central business district.	Facility Ownership: Amtrak Parking Lot Ownership: Amtrak Study currently underway to relocate the station closer to central business district.	Updated Amsterdam Station entry for consistency with other entries.
76	p. 67	Owned by the City of Rome.	Facility Ownership: Owned by the City of Rome. Parking Lot Ownership: City of Rome	Updated Rome Station entry for consistency with other entries.
77	p. 67	Currently being replaced with new facility to open in 2017.	Facility Ownership: Amtrak Parking Lot Ownership: Amtrak Currently being replaced with new facility to open in 2017.	Updated Rochester Station entry for consistency with other entries.
78	p. 67	Facility Ownership: City of Buffalo Parking Lot Ownership: City of Buffalo	Facility Ownership: NYSDOT City of Buffalo Parking Lot Ownership: NYSDOT City of Buffalo	Corrected Buffalo-Exchange Street Station entry.
79	p. 67	Facility Ownership: City of Niagara Falls Parking Lot Ownership: City of Niagara Falls	Facility Ownership: City of Niagara Falls Parking Lot Ownership: City of Niagara Falls/ NYSDOT	Corrected Niagara Falls Station entry.
80	p. 68	NYSDOT is currently building a new facility.	Facility Ownership: Amtrak Parking Lot Ownership: Amtrak/Schenectady Metroplex Development Authority NYSDOT is currently building a new facility.	Updated Schenectady Station entry for consistency with other entries.

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#	Page #	Original SDP Text	Revised SDP Text	Reason for Changes
81	p. 68	Facility Ownership: National Railroad Passenger Corporation Parking Lot Ownership: Amtrak, City of Hudson	Facility Ownership: National Railroad Passenger Corporation Amtrak Parking Lot Ownership: Amtrak, City of Hudson	Updated Hudson Station entry for consistency with other entries.
82	p. 68	Facility Ownership: Dutchess County Parking Lot Ownership: Dutchess County/CSXT	Facility Ownership: Dutchess County Amtrak Parking Lot Ownership: Amtrak-Dutchess County /CSXT	Updated Rhinecliff Station entry to current conditions.
83	p. 68	Station Operated by: Metro-NorthMNR Facility Ownership: Metro-NorthMNR Parking Lot Ownership: Metro-NorthMNR	Station Operated by: Metro-North MNR Facility Ownership: Metro-North MNR Parking Lot Ownership: Metro-NorthMNR Yonkers Parking Authority	Corrected Yonkers Station entry.
84	p. 68	Facility Ownership: National Railroad Passenger Corporation	Facility Ownership: Moynihan Train Hall – Empire State Development Corporation / New York Penn Station – Amtrak National Railroad Passenger Corporation	Updated New York City/Penn Station entry to current conditions.
85	p. 69	Local Bus Connections provided by: Utica – CENTRO (Central New York Regional Transportation Authority) Station served by; Greyhound, Adirondack Trailways, Birnie Bus Service	Local Bus Connections provided by: Utica – CENTRO (Central New York Regional Transportation Authority) Station served by; Adirondack Scenic Railroad , Greyhound, Adirondack Trailways, Birnie Bus Service	Updated Utica Station entry to current conditions.

High Speed Rail Empire Corridor Service Development Plan Errata

#	Page #	Original SDP Text	Revised SDP Text	Reason for Changes
86	p. 70	Multiple Routes and Services Operated by New York City Transit	Multiple Routes and Services Operated by Amtrak, NJ Transit, MTA/Metro-North, Long Island Railroad , New York City Transit	Updated to current conditions.
87	p. 73	<p>The program has a 25-year life-span primarily to align with anticipated funding; based on past recent history and anticipated funding programs, it is expected that an annual program of \$250 million is affordable and manageable in the context of existing and anticipated future freight and passenger operations.²⁷</p> <p>²⁷Projects are selected based on maximum passenger benefit and by geographic segment to minimize the impact of construction on railroad operations. This produces slight fluctuations in total annual costs around the \$250 million annual target.</p>	<p>The program has a 25-year life-span primarily to align with anticipated funding; based on past recent history and anticipated funding programs, it is expected that an annual program of \$250350 million is affordable and manageable in the context of existing and anticipated future freight and passenger operations.²⁷</p> <p>²⁷Projects are selected based on maximum passenger benefit and by geographic segment to minimize the impact of construction on railroad operations. This produces slight fluctuations in total annual costs around the \$350250m million annual target.</p>	Updated program cost and approach globally.

High Speed Rail Empire Corridor Service Development Plan Errata

#	Page #	Original SDP Text	Revised SDP Text	Reason for Changes
88	p. 73	The overall program is estimated to cost \$7.323 billion (2017 dollars). Although the Tier 1 Final EIS for this program indicates a capital cost over 20 years of just under \$6 billion, as this program was developed in more detail for this SDP, it was realized that the most efficient approach to rail infrastructure upgrades on an increasingly heavily used operating line is to visit each repair location once, and to upgrade to a state of good repair all elements at that location, even if they are not directly related to program objectives.	The overall program is estimated to cost \$8.8 \$7.323 billion (2017 dollars). Although the Tier 1 Final EIS for this program indicates a capital cost over 20 years of just under \$6 billion, as this program was developed in more detail for this SDP, it was realized that the most efficient approach to rail infrastructure upgrades on such an increasingly heavily used operating line is to visit each repair location only once, and to upgrade to a state of good repair all infrastructure elements at that location, even if every repair or upgrade is indirectly they are not directly related to program objectives.	Updated program cost and approach. Program cost updated globally.
89	p. 73	Thus, if the program seeks the realignment and upgrade of a single track over a three-track bridge, it makes sense for both reasons of efficiency and reasons of collateral benefit to the service to upgrade the other two tracks as well.	Thus, if the program seeks the realignment and upgrade of a single track over a three-track bridge, it makes sense for both reasons of efficiency and reasons of collateral benefit to both the passenger and freight services service to upgrade the other two tracks as well.	Updated approach.
90	p. 73	This avoids the need to return sometime later to address the other two tracks and, more importantly, leaves CSXT as the operator with greater flexibility to dispatch freight and passenger trains such that the passenger trains can still operate at the allowable speed, regardless to which track they are assigned.	This avoids the need to return to the same location sometime at a later time to address the other two tracks and, more importantly, leaves CSXT as the operator with greater flexibility to dispatch freight and passenger trains such that the passenger trains can still operate at the allowable speed, regardless to which track they are assigned.	Updated approach.

High Speed Rail Empire Corridor Service Development Plan Errata

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91	p. 73	This improved dispatch and operational flexibility gives much greater likelihood of consistent, reliable, High Speed passenger service regardless of the freight traffic running in parallel.	This improved dispatch and operational flexibility gives much greater likelihood of consistent, reliable, High-high Speed speed passenger service regardless of whether there is of the freight traffic running in parallel over the same segment of right-of-way .	Updated approach.
92	p. 73	This decision increases the program cost, by bringing the entire freight/passenger network up to higher speed track standards.	This decision to address all State of Good Repair elements at a work location necessarily increases the overall program cost. ; However, doing this benefits the program by bringing the entire freight/passenger network-rail infrastructure up to a State of Good Repair and to the higher speed track standards required to enable higher-speed passenger service, regardless of which tracks CSXT may dispatch passenger trains on any given day. In addition to the decision to broaden the implementation of high-speed infrastructure and State of Good Repair conditions over the entire right-of-way, the program also incorporates other improvements that were not specifically itemized in the Tier 1 Final EIS, but that fulfill the program objectives (without incurring additional impacts) for the section of track north of Poughkeepsie (MP 75), at the end of Metro-North territory; i.e., curve straightening along the Hudson Line to facilitate 110 mph operation and signalization to improve capacity.	Updated approach.
93	p. 74	Complete station reconstruction, ADA compliant platform and station access, viaduct repairs and parking improvements. Under Construction	Complete station reconstruction, ADA compliant platform and station access, viaduct repairs and parking improvements. Under Construction Completed	Updated status of Base Project EW-01, Schenectady Station Renovation/Platform Improvements.

High Speed Rail Empire Corridor Service Development Plan Errata

#	Page #	Original SDP Text	Revised SDP Text	Reason for Changes
94	p. 74	Upgrade existing third track to reduce congestion, delays and interference between passenger and freight trains. Under Design	Upgrade existing third track to reduce congestion, delays and interference between passenger and freight trains. Under Design Completed	Updated status of Base Project EW-6, Syracuse Track Configuration and Signal Improvements.
95	p. 75	The improvements intended for Empire Corridor South will be completed in the first five years of the twenty-five year implementation schedule.	The improvements intended for Empire Corridor South will largely be completed in the first five years of the twenty-five year implementation schedule.	Updated to current conditions.
96	p. 75	Additional trains would be added to the Empire Corridor schedule as outlined in Exhibit 7-3:	Additional trains would be added to the Empire Corridor schedule as outlined in Exhibit Exhibits 7-3 and 7-4.	Updated to account for new exhibit.
97	p. 75	n/a	Exhibit 7-4 Comparison of Service Improvements	Added new table (see Addenda) to show comparison of service improvements.
98	p. 76	These projects are anticipated to result in approximately a 15-minute savings in travel time between NYC and Albany, reducing a 150-minute trip to a scheduled 135-minute trip, and elevating average speeds from 64 mph to 70 mph over this segment.	These projects are anticipated to result in up to approximately a 15-minute savings in travel time between NYC and Albany, reducing a 150-minute trip to a scheduled 135-minute trip, and elevating average speeds from 64 mph to 70 mph over this segment.	Clarify time savings.
99	p. 77	Approximately \$1.2 billion is programmed for the Empire Corridor South year 1-5 improvements.	Approximately \$1.2 \$1.964 billion is programmed for the Empire Corridor South y Year 1-5 capital improvements, which includes equipment purchases.	Updated capital improvements program costs.

High Speed Rail Empire Corridor Service Development Plan Errata

#	Page #	Original SDP Text	Revised SDP Text	Reason for Changes
100	p. 77	To enable the additional trains, approximately \$200 million worth of locomotives and coaches will be added to the fleet, sufficient to create six full train sets (five operating trains; one in for repairs and upkeep on a rotating, preventive maintenance cycle).	To enable the additional trains, approximately \$200 \$341 million worth of locomotives and coaches will be added to the fleet, sufficient to create six full train sets (five operating trains; one in for repairs and upkeep-maintenance on a rotating, preventive maintenance cycle).	Updated costs. This change has been updated globally.
101	p. 77	The program implementation strategy for the first 5-year period is outlined in Exhibits 7-4 and 7-5.	The program implementation strategy for the first 5-year period is outlined in Exhibits 7- 54 and 7-5 . A detailed description of the individual capital projects is included in Appendix A.	Added clarification and updated exhibit numbering.
102	p. 79	Exhibit 7-4 High Speed Rail Empire Corridor Program - Empire Capital Connection Improvements for Preferred Alternative: Years 1 - 5	Revisions to program for Years 1 through 5 are shown in revised Exhibit 7-5 included in the Addenda.	Updated projects, schedule and costs in revised exhibit in Addenda.
103	p. 81	Approximately \$1.2 billion will be spent during this phase, or \$240 million annually.	Approximately \$1.2 \$1.7 billion will be spent during this phase, or \$240 \$350 million annually.	Updated for mid-term capital plan phase.
104	p. 83	Exhibit 7-5 High Speed Rail Empire Corridor Program - Empire Gateway Improvements for Preferred Alternative: Years 6 - 10	Revisions to program for Years 6 through 10 are shown in revised Exhibit 7-6 included in the Addenda.	Updated projects, schedule and costs in revised exhibit in Addenda.
105	p. 87	Exhibit 7-6 High Speed Rail Empire Corridor Program - Empire Gateway Improvements for Preferred Alternative: Years 11 - 15	Revisions to program for Years 11 through 15 are shown in revised Exhibit 7-7 included in the Addenda.	Updated projects, schedule and costs in revised exhibit in Addenda.

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#	Page #	Original SDP Text	Revised SDP Text	Reason for Changes
106	p. 88	Exhibit 7-7 High Speed Rail Empire Corridor Program - Empire Gateway Improvements for Preferred Alternative: Year 16 - 20	Revisions to program for Years 16 through 20 are shown in revised Exhibit 7-8 included in the Addenda.	Updated projects, schedule and costs in revised exhibit in Addenda.
107	p. 89	Exhibit 7-8 High Speed Rail Empire Corridor Program - Empire Gateway Improvements for Preferred Alternative: Year 21 - 25	Revisions to program for Years 21 through 25 are shown in revised Exhibit 7-9 included in the Addenda.	Updated projects, schedule and costs in revised exhibit in Addenda.
108	p. 91	Based on the foregoing summaries of the program capacity improvement sequence over the 25-year implementation period, and noting the introduction of expanded frequency of service in the first five years, crewing and staffing of rail operator forces to sustain the enhanced physical plant and additional train service is outlined in Exhibits 7-10 through 7-15.	Based on the foregoing summaries of the The staffing plan was developed based on the program capacity improvement sequence over the 25-year implementation period, and noting taking into account the introduction of expanded frequency of service in the first five years. ²⁹ Exhibits 7-10 through 7-15 display the crewing and staffing of rail operator forces to sustain the enhanced physical plant and additional train service is outlined in Exhibits 7-10 through 7-15. ²⁹ The staffing plan reflects the sequence of capital improvements shown in Exhibits 7-5 through 7-9 and in Appendix A. The information on the other project elements in each phase – miles of track, grade crossings, bridges, etc.—in Exhibits 7-10 through 7-15, is also based on the project information presented in Appendix A.	Clarified staffing plan discussion.
109	p. 93	Exhibit 7-9 High Speed Rail Empire Corridor Program-Empire Capital District Connection (New York City to Albany and Schenectady)- Staffing Plan	Exhibit 7- 109 High Speed Rail Empire Corridor Program- Empire Capital District Connection (New York City to Albany and Schenectady)- Staffing Plan for Supporting Service Growth	Renumbered/retitled exhibit and included revised table in Addenda.

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#	Page #	Original SDP Text	Revised SDP Text	Reason for Changes
110	p. 94	Exhibit 7-10 High Speed Rail Empire Corridor Program-Empire Capital District Connection (New York City to Albany and Schenectady) - Staffing Plan	Exhibit 7- 11 10 High Speed Rail Empire Corridor Program-Empire Capital District Connection (New York City to Albany and Schenectady) Improvements- Staffing Plan for Supporting Service Growth (Years 1-5)	Renumbered/retitled exhibit and included revised table in Addenda.
111	p. 95	Exhibit 7-11 High Speed Rail Empire Corridor Program-Empire Gateway- Staffing Plan	Exhibit 7- 12 10 High Speed Rail Empire Corridor Program-Empire Gateway Improvements- Staffing Plan for Supporting Service Growth (Years 6-10)	Renumbered/retitled exhibit and included revised table in Addenda.
112	p. 96	Exhibit 7-12 High Speed Rail Empire Corridor Program-Empire Gateway- Staffing Plan	Exhibit 7- 13 10 High Speed Rail Empire Corridor Program-Empire Gateway Improvements- Staffing Plan for Supporting Service Growth (Years 11-15)	Renumbered/retitled exhibit and included revised table in Addenda.
113	p. 97	Exhibit 7-13 High Speed Rail Empire Corridor Program-Empire Gateway- Staffing Plan	Exhibit 7- 14 10 High Speed Rail Empire Corridor Program-Empire Gateway Improvements- Staffing Plan for Supporting Service Growth (Years 16-20)	Renumbered/retitled exhibit and included revised table in Addenda.
114	p. 98	Exhibit 7-14 High Speed Rail Empire Corridor Program-Empire Gateway- Staffing Plan	Exhibit 7- 15 10 High Speed Rail Empire Corridor Program-Empire Gateway Improvements- Staffing Plan for Supporting Service Growth (Years 20-25)	Renumbered/retitled exhibit and included revised table in Addenda.

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#	Page #	Original SDP Text	Revised SDP Text	Reason for Changes
115	p. 99	<p>An annual target of \$250 million has been established for the program to address anticipated rates of federal support and to ensure that infrastructure work is not undertaken at a level that might interfere with daily passenger and freight services.³⁰</p> <p>³⁰ Projects are selected based on maximum passenger benefit and by geographic segment to minimize the impact of construction on railroad operations. This produces slight fluctuations in total annual costs around the \$250 million annual target.</p>	<p>An annual target of \$250 \$350 million has been established for the program to address anticipated rates of federal support and to ensure that infrastructure work is not undertaken at a level that might interfere with daily passenger and freight services.³⁰</p> <p>³⁰ Projects are selected based on maximum passenger benefit and by geographic segment to minimize the impact of construction on railroad operations. This produces slight fluctuations in total annual costs around the \$350 \$250 million annual target.</p>	Updated costs and approach globally.
116	p. 99	<p>³¹ This SDP recognizes additional travel time benefit of 4 minutes that was not considered in the EIS, resulting in a slightly larger ridership gain of 1.083 million new riders, by 2040.</p>	Deleted this footnote.	Clarified travel time savings.
117	p. 99	<p>Capital costs of \$7.323 billion (2017 dollars) are spread over the entire 25-year implementation time frame for the program. Equipment costs amount to approximately \$200 million, with infrastructure improvements costing \$7.123 billion.</p>	<p>Capital costs of \$8.8 billion 7.323 billion (2017 dollars) are spread over the entire 25-year implementation time frame for the program. Equipment costs amount to approximately \$200 million \$341 million, with infrastructure improvements costing \$7.123 billion \$8.5 billion.</p>	Updated equipment and infrastructure improvements cost.

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#	Page #	Original SDP Text	Revised SDP Text	Reason for Changes
118	p. 100	By the time the program is completed in 2045, it is estimated that the additional trains and improved and expanded track and signal system will require approximately 141 additional train, station, and track/signal maintenance personnel above current allocations.	By the time the program is completed in 2045 after 25 years , it is estimated that the additional trains and improved and expanded track and signal system will require approximately 141 210 additional train, station, and track/signal maintenance personnel above current allocations.	Clarified program timeframes and staffing.
119	p. 100	The first five years emphasize Capital Empire District (Empire Corridor South) infrastructure and additional train equipment, with the balance beyond Year 5 focused on the Empire Gateway (Empire Corridor West) Albany – Buffalo/Niagara right of way. Capital costs are divided generally by type of improvement as shown in Exhibit 8-2.	The first five years emphasize Capital Empire District (Empire Corridor South) infrastructure and additional train equipment, with the balance beyond Year 5 focused on the Empire Gateway (Empire Corridor West) Albany – Buffalo/Niagara right of way. Capital costs for individual projects are divided generally by type of improvement as shown in Exhibit 8-2 presented in detail in Appendix A.	Clarified text and removed Exhibit 8-2.
120	p. 101	Exhibit 8-1 Annual Apportionment of Total Program Capital Costs (Empire Capital District Connection and Empire Corridor Gateway)	Updated costs in Exhibit 8-1, as shown in the Addenda. Added note: Note: Capital costs shown above are for millions of dollars and exclude equipment costs (locomotives and train cars).	Updated project costs as presented in revised exhibit included in the Addenda.
121	p. 102	Exhibit 8-2 Capital Costs by Category	Removed table.	Removed table and updated appendix to include lists and description of specific projects.

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#	Page #	Original SDP Text	Revised SDP Text	Reason for Changes
122	p. 102	The program will cost about \$7.323 billion over 25 years (2017 dollars). About \$2.4 billion will be required in the first ten years, with the balance over the remaining fifteen years. Exhibits 7-4 - 7-9 show the allocation of costs across the 35 separate program initiatives that comprise the program, as well as year-by-year over the 25-year investment period.	The program will cost about \$8.8 \$7.323 billion over 25 years (2017 dollars). About \$3.4 \$2.4 billion will be required in the first ten years for capital projects and including equipment, this total would be \$3.7 billion , with the balance over the remaining fifteen years. Exhibits 7-4 - 7-9 show the allocation of costs across the 43 35 separate program initiatives that comprise the program (as detailed in Appendix A) , as well as year-by-year over the 25-year investment period. Funding Sources	Clarified and updated project costs globally.
123	p. 105	Investment in intercity passenger rail and high speed rail is motivated by the desire to realize direct passenger benefits associated with faster, safer, and more reliable travel and broader-based community benefits of improved environmental quality, reduced air and highway congestion, and economic development.	Investment in intercity passenger rail and high speed rail is motivated by the desire to realize direct passenger benefits associated with faster, safer, and more reliable travel ⁷ . These travel benefits and confer broader-based community benefits of improved environmental quality, reduced air and highway congestion, and economic development.	Clarified.

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#	Page #	Original SDP Text	Revised SDP Text	Reason for Changes
124	p. 105	Passenger rail improvements create economic impacts in the form of travel time savings for rail users, reduced congestion on other transportation modes, and regional productivity increases from more efficient access to larger labor and trade markets. These savings cascade through the economy, creating jobs, increasing overall economic activity, and raising personal income.	Passenger rail improvements create economic impacts benefits in the form of travel time savings for rail users, reduced congestion on other transportation modes, and regional productivity increases from more efficient access to larger labor and trade markets. These savings cascade through the economy, creating jobs, increasing overall economic activity, and raising personal income.	Clarified economic benefits discussion.
125	p. 105	For the High Speed Rail Empire Corridor Program, the direct benefits are a 94-minute reduction of overall travel time from 9 to 7.5 hours between NYC and Niagara Falls, and an increase in reliability from fewer than 75% to more than 90% of trains arriving on time. Of the 90 minutes of travel time savings, 80 minutes occurs along the Empire Corridor West segment between Albany and Niagara Falls. This is significant, as this section is most affected by freight conflicts and unreliability; in 2012, the “average delay” penalty assigned in the travel demand forecasting model was 90 minutes, with the great majority allocated to the Empire Corridor West section.	For the High Speed Rail Empire Corridor Program, the direct benefits are a 94- an approximately 90- minute reduction of overall travel time from 9 to 7.5 hours between NYC and Niagara Falls, and an increase in reliability from fewer than 75% to more than 90% of trains arriving on time. Of the 90 94- approximately 75- minutes of travel time savings, approximately 75- 80 minutes occurs along the Empire Corridor West segment between Albany and Niagara Falls. This is significant, as this section is most affected by freight conflicts and unreliability; in 2012, the “average delay” penalty assigned in the travel demand forecasting model was 90 minutes, with the great majority allocated to the Empire Corridor West section.	Clarified travel time savings.

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#	Page #	Original SDP Text	Revised SDP Text	Reason for Changes
126	p. 105	Indirect benefits of the program are improved environmental conditions (air quality, open land), reduced traffic congestion on key roads, the enhancement of rail stations as economic engines for downtown areas and the freeing of airline capacity for longer-range travel that cannot be effectively served by rail	Indirect benefits of the program are improved environmental conditions (air quality, open land); and reduced traffic congestion on key roads. Other indirect benefits include the enhancement of rail stations as economic engines for downtown areas and the freeing of airline capacity for longer-range travel that cannot be effectively served by rail	Clarified.
127	p. 105	The program will cost \$7.32 billion (2017 dollars) to construct over 25 years, with improved travel time and reduced delay benefits accruing gradually as improvements are made. The maintenance and operation of the new infrastructure and the additional four daily trains intended to be added to the existing service will cost \$70 million annually at the completion of the program in 2040.	The program will cost \$7.32 \$8.8 billion (2017 dollars) to construct over 25 years, with improved travel time and reduced delay benefits accruing gradually as improvements are made. The maintenance and operation of the new infrastructure and the additional four daily trains intended to be added to the existing service will cost \$70 million annually at the completion of the program in 2035 2040 .	Updated program costs and completion year. Change made globally.

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#	Page #	Original SDP Text	Revised SDP Text	Reason for Changes
128	p. 105	The 2-hour trip time target represents a 15-minute savings for passengers between Albany and New York City. The 30-minute trip time reduction will be accrued incrementally as the supporting projects are completed. This reduction benefits 90% of the ridership on the Empire Corridor.	The 2-hour and 15-minute trip time target represents a 30- 15-minute savings for passengers between Albany and New York City. The 30-15-minute trip time reduction will be accrued incrementally as the supporting projects are completed. This reduction benefits 90% of the ridership on the Empire Corridor.	Clarified trip time savings. This change has been made globally.
129	pp. 106 and 107	Passenger ridership forecasts for High Speed Rail Empire Corridor Program project ridership increasing to 2.7 million riders in 2040.	Passenger ridership forecasts for High Speed Rail Empire Corridor Program project ridership increasing to 2.7 2.6 million riders in with implementation of the full program 2040 .	Updated project ridership forecast. This change has been made globally.
130	p. 107	All improvements are within the existing right-of-way, resulting in minimal environmental impacts. Some projects contained in the program will require more focused environmental analysis before they can be built.	All improvements are situated within the existing right-of-way, resulting in minimal environmental impacts. Some projects contained in the program will require more focused environmental analysis before they can be built. The program is anticipated to result in a diversion from highways of 209,279 one-way trips, which will result in benefits in terms of both relieving traffic congestion and reducing air quality emissions. The long-term impact on greenhouse gas emissions is positive. The Tier 1 Final EIS concluded that the net annual operational benefits for the Preferred Alternative would be roughly equivalent to eliminating the emissions associated with the energy and electricity consumption of 2,500 to 4,200 average U.S. single family homes every year. ³³ ³³ Based on U.S. EPA's GHG Equivalencies Calculator, <http://www.epa.gov/cleanenergy/energy-resources/calculator.html>.	Updated project benefits discussion.

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#	Page #	Original SDP Text	Revised SDP Text	Reason for Changes
131	p. 106	Operation of trains at higher speeds between Albany-Rensselaer and New York City creates opportunities for “super-commuters” to live and work from greater distances away from job centers while enjoying shorter commuting time and expanded employment opportunities. Employers gain the benefit of drawing upon a larger geographic area for a trained and skilled labor force.	<p>Operation of trains at higher speeds between Albany-Rensselaer and New York City creates opportunities for “super-commuters” to live and work from greater distances away from job centers, while enjoying shorter commuting time and expanded employment opportunities. Employers gain the benefit of drawing upon a larger geographic area for a trained and skilled labor force. According to a U.S. Conference of Mayor’s Report,³⁴ which examined the impact of high-speed rail on the City of Albany, the introduction of high-speed rail along the corridor can contribute substantially to economic growth by driving higher-density, mixed-use development at train stations; expanding visitor markets and generating additional spending; broadening regional labor markets; and supporting the growth of technology clusters. This report projects that economic benefits of New York City to Albany high-speed rail service to the Albany metropolitan area alone would range from \$358 million (with 79/90 mph service). The economic analysis of the construction of the program estimated that the program would create approximately 68,048 job-years, and other benefits are presented in Exhibit 9-1.</p> <p>³⁴ Economic Development Research Group, Inc. The Economic Impact of High Speed Rail and Cities and their Metropolitan Areas. Prepared for the U.S. Conference of Mayors (undated), released June 2010.</p>	Updated to include U.S. Conference of Mayor’s Report which examined the impact of high-speed rail in Albany.

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#	Page #	Original SDP Text	Revised SDP Text	Reason for Changes
132	p. 106	For Empire Corridor South, trip time reductions and service improvements will be take effect as infrastructure improvements are completed between New York City and Albany-Rensselaer. Thus, program benefits will be realized steadily over time.	For Empire Corridor South, trip time reductions and service improvements will take effect as infrastructure improvements are completed between New York City and Albany-Rensselaer. Thus, program benefits will be realized steadily over time. The focus for travel time improvements was on the most frequently traveled corridor between New York City and Albany-Rensselaer, with most of these improvements occurring over the first 1 to 5 years of the start of construction and all being completed within 10 years.	Updated project benefits discussion.
133	p. 106	Overall trip time between Albany/Schenectady—Niagara Falls will be reduced by 1 hour 15 minutes, from the current 5 hour 58 minutes to 4 hours 43 minutes.	Overall trip time between Albany/Schenectady—Niagara Falls will be reduced by approximately 1 hour 15 minutes, from the current 5 hour 58 minutes to 4 hours 43 minutes.	Clarified travel time savings.
134	p. 107	Freight service is not impacted as the programs add 283 miles of third track and 39 miles of fourth track, significantly increasing the overall capacity of the system in keeping with projected increasing demand.	Freight service is not impacted as the programs will add 283 miles of third track and 39 miles of fourth track, significantly increasing the overall system capacity of the system in keeping with projected increasing demand. The program would provide a 10 percent decrease in freight train delay minutes over the Base Alternative.	Updated freight service benefits.
135	p. 107	All improvements are within the existing right-of-way, resulting in minimal environmental impacts. Some projects contained in the program will require more focused environmental analysis before they can be built. Air quality improvements result as travelers divert from more polluting auto and bus to less polluting trains.	All The majority of the track improvements are situated within the existing right-of-way, resulting in minimal environmental impacts. Some projects contained in the program will require more focused environmental analysis before they can be built. Air quality improvements would result as travelers divert from more polluting auto and bus to less polluting trains. As summarized in the prior section and presented in the Tier 1 EIS, the program would result in a substantial diversion of passengers to rail from automotive uses, resulting in a substantial decrease in pollutant emissions.	Clarified project benefits discussion.

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#	Page #	Original SDP Text	Revised SDP Text	Reason for Changes
136	p.107	Construction and operation of the improvements Albany-Rensselaer, and Niagara Falls will confer significant economic benefit and jobs on upstate cities due to the multiplier effect of spending on material and construction work, as well as additional staffing of local businesses in response to the economic infusion created by the program. Employers gain the benefit of drawing upon a larger geographic area for a trained and skilled labor force.	Construction and operation of the improvements between Albany-Rensselaer, and Niagara Falls will confer significant economic benefit and jobs on upstate cities. Moreover, benefits will also accrue due to the multiplier effect of spending on material and construction work, as well as additional staffing of local businesses in response to the economic infusion created by the program. In addition to making upstate cities more accessible to and from major metropolitan areas for tourism and commerce, employers Employers gain the benefit of drawing upon a larger geographic area for a trained and skilled labor force.	Updated and clarified indirect benefits.
137	p. 107	Service frequency increases, along with future trip time reductions are achieved without undue interference with freight rail service.	Service frequency increases, along with future trip time reductions are achieved without undue interference with freight rail service. Moreover, the provision of exclusive tracks for passenger rail travel would provide direct benefits for parallel freight operations, reducing conflicts with passenger trains and providing improved travel times for freight along the heavily used Empire Corridor West, which provides links with Canada, the Midwest, and the international ports of New York and New Jersey.	Provided additional clarification on indirect benefits.
138	p. 107	Further economic benefits flow from the multiplier effect of increased passenger spending in downtown station areas and the Corridor as a whole.	Further economic benefits flow from the multiplier effect of increased passenger spending in downtown station areas and the Corridor as a whole. Benefits in terms of jobs created are described in the following section.	Clarified economic benefits discussion.
139	p. 108	(Appendix A shows the year-by-year detail underlying these metrics.)	(Appendix A shows the year-by-year detail underlying these metrics.)	Removed reference to appendix.

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#	Page #	Original SDP Text	Revised SDP Text	Reason for Changes
140	111	Key to Exhibit 9-1: Travel Time Savings per Train Each Year, Summed over 5-Year Periods (minutes): In Years 6-25, improvements ultimately producing an 84-minute time savings will be confined to the Empire Corridor West segment, and only the eight trains traveling beyond Albany to Niagara Falls and back will receive the travel time benefits for each year of improvements.	Key to Exhibit 9-1: Travel Time Savings per Train Each Year, Summed over 5-Year Periods (minutes): In Years 6-25, improvements ultimately producing up to an approximately 80-84 -minute time savings will be confined to the Empire Corridor West segment, and only the eight trains traveling beyond Albany to Niagara Falls and back will receive the travel time benefits for each year of improvements.	Clarified travel time savings.

#	Page #	Original SDP Text	Revised SDP Text	Reason for Changes
141	p. 113	<p>Key to Exhibit 9-1: Mode Shift Emissions Savings (metric tons of regulated pollutants + GHG: The Tier 1 Final EIS notes an overall reduction in energy consumption by Empire Corridor travelers of 33,188 metric tons of CO₂ saved in 2035 due to full program implementation and the diversion of 1,083,000 trips from auto/bus/air to rail.</p> <p>...Thus, if the total energy savings is due to the diversion of 1.083 million trips from auto/bus/air to rail in 2035, then the proportion of that diversion represented by each year's ridership gains (totaled over Years 1-5) applied to the total 33,188 metric tons of CO₂ conserved yields the emissions reduction in that year due to mode shifts among Empire Corridor travelers. In Years 1-5, 221,952 trips – or 20.4% of the total 1.083 million trips diverted by Year 25 – are diverted from auto/bus/air to rail. Applying the 20.4% to the total 33,188 metric tons of CO₂ saved over the entire 25-year program produces a result of 6,799 metric tons of CO₂ saved.</p>	<p>Key to Exhibit 9-1: Mode Shift Emissions Savings (metric tons of regulated pollutants + GHG: The Tier 1 Final EIS notes an overall reduction in energy consumption by Empire Corridor travelers of 33,188 metric tons of CO_{2e} (carbon dioxide equivalent⁴¹) saved in 2035 due to full program implementation and the diversion of 1,00083,000 trips from auto/bus/air to rail.</p> <p>...Thus, if the total energy savings is due to the diversion of 1 million trips from auto/bus/air to rail in 2035, then the proportion of that diversion represented by each year's ridership gains (totaled over Years 1-5) applied to the total 33,188 metric tons of CO_{2e} conserved (presented in the Tier 1 FEIS) yields the emissions reduction in that year due to mode shifts among Empire Corridor travelers. In Years 1-5, 221,952 trips – or 20.4% of the total 1.083 million trips diverted by Year 25 – are diverted from auto/bus/air to rail. Applying the 20.4% to the total 33,188 metric tons of CO_{2e} saved over the entire 25-year program produces a result of 6,799 metric tons of CO_{2e} saved.</p> <p>⁴¹ To present a complete inventory of all GHGs, component emissions are added together and presented as CO2 equivalent (CO2e)—a unit representing the quantity of each GHG weighted by its effectiveness using CO2 as a reference. This is achieved by multiplying the quantity of each GHG emitted by a factor called global warming potential (GWP).</p>	Revised emissions savings discussion. Made this change globally.

#	Page #	Original SDP Text	Revised SDP Text	Reason for Changes
142	p. 114	<p>Key to Exhibit 9-1: Job Creation Each Year, Summed over 5-Year Periods (job-years): A total of 55,777 total job years⁴³ were predicted to result from the construction over the 25-year program term.⁴⁴</p> <p>⁴³ An analysis by HNTB resulted in an estimate of 2,129 job-years/year for the program at a \$6 billion funding level for a total of 55,777 jobs created during construction. Escalating this to \$7.323 billion, and adding the job-years created due to the ripple effect of permanent railroad jobs added as infrastructure maintenance and operational needs expand, and subtracting the direct rail jobs created to staff this infrastructure maintenance and operations, produces the 55,777 job-years value attributed to the program.</p> <p>⁴⁴ On a national standard, each \$1 billion of investment typically generates 7,700-8,100 job-years. Applying that metric range produces a range of potential economic impacts for the \$7.323 billion program of 56,378-59,316 job years created.</p>	<p>Key to Exhibit 9-1: Job Creation Each Year, Summed over 5-Year Periods (job-years): A total of 55,777 68,048 total job years⁴³ were predicted to result from the construction over the 25-year program term.⁴⁴</p> <p>⁴³ An economic analysis performed for the study by HNTB resulted in an estimate of 2,129 job-years/year for the program as presented in the Tier 1 EIS at a \$6 billion funding level for a total of 55,777 job years created during construction. The earlier estimate was created by Escalating this to \$7.323 billion, and adding the job-years created due to the ripple effect of permanent railroad jobs in the entire system added as infrastructure maintenance and operational needs expand and subtracting the direct rail jobs created to staff this infrastructure maintenance and operations. Escalating this earlier year engineering estimate to the \$8.8 billion program outlined in this SDP to encompass the State of Good Repair and additional speed improvement projects included in the program, produces the 55,777 68,048 job-years value attributed to the construction program.⁴⁴</p> <p>⁴⁴ On a national standard, each \$1 billion of investment typically generates 7,700-8,100 job-years. Applying that metric range produces a range of potential economic impacts for the \$8.8 \$7.323 billion program of 56,378-59,316 67,760 – 71,280 job years created.</p>	Clarified updates to job creation projected in economic analysis due to program construction.

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#	Page #	Original SDP Text	Revised SDP Text	Reason for Changes
143	p. 115	Key to Exhibit 9-1: Direct Employment Each Year, Summed over 5-Year Periods (rail system jobs): Additional rail jobs required to operate and maintain new infrastructure and additional trains, as needed in each year as improvements are built or new train service is added, totaled over each 5-year period. These were derived using industry-standard metrics of workers per unit of rail infrastructure (miles of track or number of switches, square footage of stations, per train crew requirements).	Key to Exhibit 9-1: Direct Employment Each Year, Summed over 5-Year Periods (rail system jobs): Additional rail jobs required to operate and maintain new infrastructure and additional trains, as needed in each year as improvements are built or new train service is added, totaled over each 5-year period. As shown in Exhibits 7-10 through 7-15, t These were derived using industry-standard metrics of workers per unit of rail infrastructure (miles of track or number of switches, square footage of stations, per train crew requirements).	Clarified basis for permanent railroad employment estimates.
144	p. App-1	Appendix A	Updated tables in Appendix A to reflect greater clarity in project descriptions and geographic locations, as presented in the Addenda. Deleted series of tables showing the High Speed Rail Empire Corridor Program Improvements for the Preferred Alternative (Years 1-5, 6-10, 11-15, 16-20, and 21-25) and accompanying tables showing Improvements and Benefits for the Preferred Alternative for the same timeframes. Added detailed NYSDOT project list for the 25-year Capital Improvement Program.	Project lists, descriptions, and costs adjusted to reflect consistent base year of 2017 and to reflect updates in NYSDOT's program of improvements.

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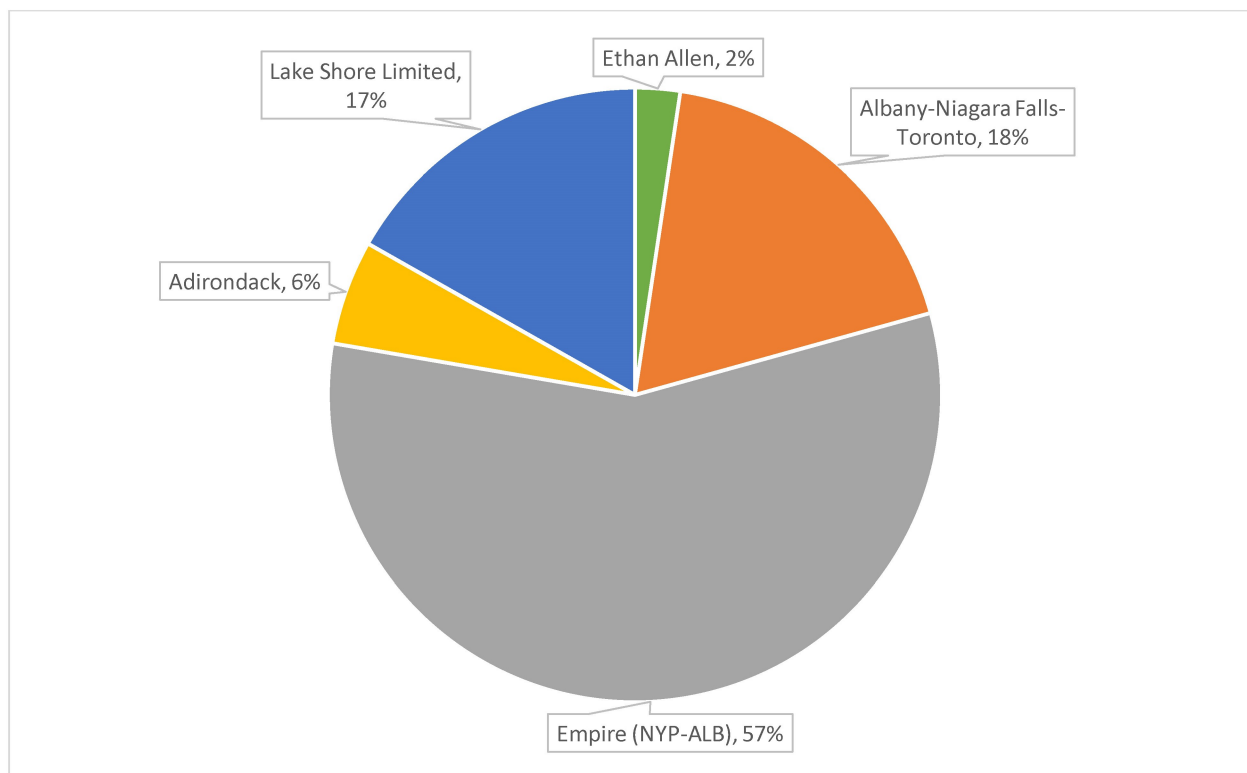
Addenda

Exhibit 2-2 New, recently completed station at Rochester



High Speed Rail Empire Corridor Service Development Plan Errata

Exhibit 3-3 Empire Corridor Ridership by Segment



High Speed Rail Empire Corridor Service Development Plan Errata

Exhibit 7-4 Comparison of Service Improvements

Route	CURRENT Roundtrips		PROPOSED Roundtrips		Increase in Trains Operated Roundtrips	
	Hudson Valley	Empire Corridor West	Hudson Valley	Empire Corridor West	Hudson Valley	Empire Corridor West
Total Roundtrips	13	4	18	9	5	5
Lake Shore Limited (to Chicago)	1	1	1	1	0	0
Empire Corridor (Hudson Valley)	7	0	8	0	1	0
Empire Corridor (Syracuse-Niagara Falls) (a)	2	2	6 (a)	7 (a)	4	5
Maple Leaf (Niagara Falls – Toronto)	1	1	1	1	0	0
Adirondack (Montreal, Canada) (b)	1	0	1	0	0	0
Ethan Allen Express (Burlington, VT) (c)	1	0	1	0	0	0

19 - Total Round Trips on the route; and increase of 6 new roundtrips, with a focus on improving service on the Empire Corridor West of Albany-Rensselaer; totals reflect weekdays (maximum) since only 14 trains will operate daily and 5 trains will operate on weekdays only (2 trains servicing NYC-ALB, 2 trains between NYC-Saratoga Springs, and 1 ALB-NFL train)

Notes:

(a) – includes a new train that starts from Albany-Rensselaer for Niagara Falls (Monday-Friday) and provides a late afternoon departure return and totals also include two new trains providing daily service between Syracuse and NYC

(b) – two of the Hudson Valley trains are now extended to Saratoga Springs providing four roundtrips from that station each weekday

(c) – this train has been extended from Rutland to Burlington, Vermont

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Exhibit 7-5 High Speed Rail Empire Corridor Program - Empire Capital Connection Improvements for Preferred Alternative: Years 1 - 5

Project Number	Project Area	Primary Project Type	Goals	Year 1 \$310 M	Year 2 \$438 M	Year 3 \$439 M	Year 4 \$394 M	Year 5 \$383 M	Estimated Project Cost (2017 \$ M)
SRP-01	Spuyten-Duyvil MP 9- MP 13	Second track, bridge upgrade	RELIABILITY <ul style="list-style-type: none">▪ Reduce Delays▪ Safety▪ Increase Capacity			Start SRP-01	SRP-01 Continues	COMPLETE SRP-01	\$90
ESC-04	Rhinecliff to Rensselaer MPs 105 – 130	Rock Slope Stabilization	SAFETY <ul style="list-style-type: none">▪ Reduce Delays▪ Improve Reliability	Start ESC-04	COMPLETE ESC-04				\$ 9
ESC-05	Staatsburg to Stuyvesant CP82 – CP99 – CP136	Additional Interlockings	RELIABILITY <ul style="list-style-type: none">▪ Reduce Delays▪ Safety▪ Increase Capacity		Start ESC-05	ESC-05 Continues	COMPLETE ESC-05		\$ 24
SRP-03	Hudson Line Croton-Harmon Third Track and Interlockings MP 53 – MP 63	3rd Track and Interlockings	RELIABILITY <ul style="list-style-type: none">▪ Reduce Delays▪ Safety▪ Increase Capacity				COMPLETE SRP-03		\$129
ESC-14	Hudson Station MP 114 – MP115	High Level Platform	RELIABILITY <ul style="list-style-type: none">▪ Reduce Delays,▪ Improve Safety▪ ADA Improvement	Start ESC-14	COMPLETE ESC-14				\$ 44
ESC-02	Staatsburg to Stockport MP 85 – MP 118	Hudson Line Bridge Replacements	TRIP TIME REDUCTION <ul style="list-style-type: none">▪ Capacity▪ Speed Improvements▪ State of Good Repair	Start ESC-51	ESC-51 Continues	ESC-51 Continues	ESC-51 Continues	COMPLETE ESC-51	\$ 303

Project Number	Project Area	Primary Project Type	Goals	Year 1 \$310 M	Year 2 \$438 M	Year 3 \$439 M	Year 4 \$394 M	Year 5 \$383 M	Estimated Project Cost (2017 \$ M)
ESC-47	New Signal System CP 75 – CP169	Communications & Signal	TRIP TIME REDUCTION <ul style="list-style-type: none">CapacitySpeed ImprovementsSafety				Start ESC-47 (Complete in Year 6)	ESC-47 Continues	\$96 (\$144 total)
ESC-20	Rhinecliff Station MP 89	High Level Platform	RELIABILITY <ul style="list-style-type: none">Reduce DelaysImprove SafetyADA Improvement		Start ESC-20	ESC-20 Continues	COMPLETE ESC-20		\$ 40
ESC-13	Poughkeepsie CP 72 – CP75	Upgrade Track Speeds & Yard Improvements	TRIP TIME REDUCTION <ul style="list-style-type: none">Improve ReliabilityCapacity Improvements		Start ESC-26	ESC-26 Continues	COMPLETE ESC-13		\$ 64
ESC-36	CP75 – CP114	110 MPH Speed Improvement Project	TRIP TIME REDUCTION <ul style="list-style-type: none">Speed Improvements	Start ESC-35 & ESC-36	ESC-35 & ESC-36 Continues	COMPLETE ESC-35 & ESC-36			\$ 261
ESC-35	CP114 – CP124								
ESC-18	Metro North Railroad Tarrytown MP 24 – MP 25	Pocket Track CP25 Additional 3rd Rail	RELIABILITY <ul style="list-style-type: none">Reduce DelaysSafetyIncrease Capacity	Start ESC-18	COMPLETE ESC-18				\$ 5
ESC-12	Hudson Line High Capacity Signal System Croton Harmon to Poughkeepsie MP 33 – MP 76	Communications and Signal	TRIP TIME REDUCTION <ul style="list-style-type: none">CapacitySpeed ImprovementsSafety					COMPLETE ESC-12	\$100
ESC-01	Livingston Avenue Moveable Bridge MP 143	Replacement of Bridge	RELIABILITY <ul style="list-style-type: none">CapacitySafetyState of Good Repair	Start ESC-15	ESC-01 Continues	COMPLETE ESC-01			\$ 400

Project Number	Project Area	Primary Project Type	Goals	Year 1 \$310 M	Year 2 \$438 M	Year 3 \$439 M	Year 4 \$394 M	Year 5 \$383 M	Estimated Project Cost (2017 \$ M)	
ESC-30, ESC-33	EMPIRE GATEWAY Schenectady CP161 to CP169	Double Track Project Reconfigure CP 169	TRIP TIME REDUCTION <ul style="list-style-type: none">CapacitySpeed ImprovementsSafety					Start ESC-30 & ESC-33 (Complete in Year 6)	\$ 60 (\$120 Total)	
HSR	Acquisition of additional locomotives and coaches to support service expansion	Equipment	SERVICE GROWTH <ul style="list-style-type: none">Increase CapacityImprove ReliabilityImprove Passenger Experience		Start Procurement of New Locomotives & Coaches	Procurement of New Locomotives & Coaches Continues	Procurement of New Locomotives & Coaches Continues	COMPLETED Procurement of New Locomotives & Coaches	\$ 340	
									Total Investment Years 1 through 5	\$1,964 M

Exhibit 7-6 High Speed Rail Empire Corridor Program - Empire Gateway Improvements for Preferred Alternative: Years 6 - 10

Project Number	Project Area	Primary Project Type	Goals	Year 6 \$313 M	Year 7 \$332 M	Year 8 \$379 M	Year 9 \$311 M	Year 10 \$396 M	Estimated Project Cost (2017 \$ M)
ESC-47	New Signal System CP 75 – CP169	Communications & Signal	TRIP TIME REDUCTION <ul style="list-style-type: none">CapacitySpeed ImprovementsSafety	COMPLETE] (Start in Year 4) Signalization CP 75-169					\$48 (\$140 total)
ESC-30, ESC-33	Capital District New Trackage eliminates single track operation and rehabilitate Mohawk River Bridge	Track & Signal Install 2nd Track from CP161 (Schenectady) to CP169 (Hoffman's)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reduction	COMPLETE (Start in Year 5) Double Track CP161-169 Reconfigure CP 169					\$ 60 (\$120 Total)
HSR-2, HSR-3, EWC-3, EWC-5	Mohawk Valley Congestion Relief Adds trackage and increases operating speeds to support trip time reductions Mohawk Valley Empire Corridor Congestion Relief (CP 175, CP239 & CP248) (MPs175 to 294)	Track & Signal Add Main Tracks from CP169 (Hoffman's) to CP184 (Fonda), Amsterdam Station upgrades	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reduction		Start Installation	COMPLETE 3rd track MP 169-179 4th track MP 170-174 3rd & 4 th tracks MP 174 to MP 184 Amsterdam Station CP 175, CP 239, CP 248			\$664
HSR-6	Mohawk Valley Adds trackage and increases operating speeds to support trip time reductions	Track & Signal Additional Main Tracks from CP226 (Herkimer) to CP235 (Utica)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reduction	COMPLETE 3rd Track MP 226 to MP 235					\$105
HSR-7 EWC-26	Utica Union Station Improves operation of passenger trains and freight trains at Utica Union Station	Track & Signal Add Main Tracks from CP235 (Utica) to CP239 (Yorkville) Union Station upgrades	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityTrip Time reductionImprove Station Operations				Start Installation	COMPLETE 3 rd & 4th Track MP 235 to MP-239 Union Station	\$132
HSR-8, EWC-27	Mohawk Valley Adds trackage and increases operating speeds to support trip time reductions and includes Rome Station upgrades	Track & Signal Add Main Tracks from CP239 (Yorkville) to CP246 (Whitestown) Rome Station Upgrades	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reduction	COMPLETE 3 rd Track MP 239 to MP 246 Rome Station					\$100

Project Number	Project Area	Primary Project Type	Goals	Year 6 \$313 M	Year 7 \$332 M	Year 8 \$379 M	Year 9 \$311 M	Year 10 \$396 M	Estimated Project Cost (2017 \$ M)
HSR-9	Mohawk Valley Adds trackage and increases operating speeds to support trip time reductions	Track & Signal Additional Main Tracks CP246 (Rome) – CP259 (Verona)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reduction					Start Installation (Complete in Year 11) 3 rd Track MP 246 to MP-259	\$116 (\$232 Total)
HSR-16	Rochester Station Improve interlocking to improve operation of freight and passenger trains west of Rochester Station	Track & Signal Rebuild Interlocking at CP3 73	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityTrip Time reductionImproves Station Operation				COMPLETE Rebuild Interlocking CP-373 3 rd & 4 th Track MP 373 to 374.3		\$ 30
EWC-18	Niagara Falls High Speed Rail Maintenance Facility	Maintenance Facility MP QDN27	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityTrip Time reductionImproves Station Operation			Start installation	Continue Installation	COMPLETE Maintenance Facility	\$141
HSR-20, EWC-21	Niagara Branch Additional capacity eliminates single track operation	Track & Signal Install second track MPs QDN 2-7 and MPs QDN 17-22.8, MPs Upgrade existing track QDN 25-28, Signalization.	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reduction				Start Installation of Double Track & Eliminate Single Track Operation	COMPLETE Installation of Double Track Eliminate Single Track Operation	\$335
Total Investment Years 6 through 10									\$ 1,731 M

Exhibit 7-7 High Speed Rail Empire Corridor Program - Empire Gateway Improvements for Preferred Alternative: Years 11 - 15

Project Number	Project Area	Primary Project Type	Goals	Year 11 \$320 M	Year 12 \$321 M	Year 13 \$320 M	Year 14 \$355 M	Year 15 \$363 M	Estimated Project Cost (2017 \$ M)
HSR-5	Mohawk Valley <i>Adds trackage to allow passenger train faster operation with freight trains</i>	Track & Signal Additional Main Tracks Third Track MP218 (Little Falls) – MP226 (Herkimer)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reductionImproved Station Operations				Start Installation (Complete in Year 16) 3 rd Track MPs 218-226	Continue Installation	\$ 174 (\$261 Total)
HSR-9	Mohawk Valley <i>Adds trackage and increases operating speeds to support trip time reductions</i>	Track & Signal Additional Main Tracks CP246 (Rome) – CP259 (Verona)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reduction	COMPLETE (Start Installation in Year 10) 3 rd Track MP 246 to MP-259					\$116 (\$232 Total)
HSR-10	Syracuse Terminal Subdivision <i>Increased Capacity that will support trip time reductions</i>	Track & Signal Additional Main Tracks Third Track MP259 (Verona) to MP283 (East End of DeWitt Yard)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reduction	Start Installation	Continue Installation	Continue Installation	Continue Installation	COMPLETE 3 rd Track MP 259 to MP 283	\$ 520
HSR-12	East of Seneca River Bridge <i>Adds trackage and increases operating speeds to support trip time reductions</i>	Track & Signal Additional Main Tracks Third Track MP310 (Weedsport) – MP359 (east end of Seneca River)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reduction				Start Installation (Complete in Year 17) 3 rd Track MP 310 to MP 359	Continue Installation	\$ 188 (\$547 Total)
HSR-14	Rochester “West Shore Bypass” <i>Routes freight trains away from downtown Rochester and Station area increasing capacity</i>	Track & Signal Additional Main Tracks “West Shore Bypass” Double Track CP347.4 (Palmyra) –CP369 (Rochester)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reductionImproved Station Operations				Start Installation (Complete in Year 18) 2 nd Track MP 347 to MP 369	Continue Installation	\$ 148 (\$297 TOTAL)

Project Number	Project Area	Primary Project Type	Goals	Year 11 \$320 M	Year 12 \$321 M	Year 13 \$320 M	Year 14 \$355 M	Year 15 \$363 M	Estimated Project Cost (2017 \$ M)
HSR-17	Rochester Subdivision <i>Adds capacity to allow for better operation of freight and passenger trains east of Rochester Station</i>	Track & Signal Additional Main Tracks Third Track MP374 (Churchville) – MP388 (Gates) in the Rochester area	<ul style="list-style-type: none">▪ Capacity Improvement▪ Better Reliability▪ Increase Speed▪ Trip Time reduction▪ Improved Station Operations	Start Installation	Continue Installation	COMPLETE 3 rd Track MP 374 to MP 388]			\$ 298
HSR-18	Rochester Subdivision <i>Adds trackage to increase operating speeds and support trip time reductions</i>	Track & Signal Additional Main Tracks Third Track MP388 (Gates) to MP 399 (Bergen)	<ul style="list-style-type: none">▪ Capacity Improvement▪ Better Reliability▪ Increase Speed▪ Trip Time reduction▪ Improved Station Operations		Start Installation	COMPLETE 3 rd Track MP 388 to MP 399			\$ 235
Total Investment Years 11 through 15									\$ 1,679 M

Exhibit 7-8 High Speed Rail Empire Corridor Program - Empire Gateway Improvements for Preferred Alternative: Years 16 – 20

Project Number	Project Area	Primary Project Type	Goals	Year 16 \$337 M	Year 17 \$359 M	Year 18 \$314 M	Year 19 \$265 M	Year 20 \$264 M	Estimated Project Cost (2017 \$ M)
HSR-4	Mohawk Valley <i>Adds trackage to allow passenger trains faster operation on the multiple curves along the Mohawk River</i>	Track & Signal Additional Main Tracks Third Track MP184 (Fonda) to MP218 (Little Falls), fourth track MPs 204 to 214	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reductions			Start Installation (Complete in Year 25) 3rd Track MPs 184-218 4th Track MPs 204-214	Continue Installation	Continue Installation	\$ 344 (\$688 Total)
HSR-5	Mohawk Valley <i>Adds trackage to allow passenger train faster operation with freight trains</i>	Track & Signal Additional Main Tracks Third Tracks MP218 (Little Falls) – MP226 (Herkimer)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reductionImproved Station Operations	COMPLETE (Start in Year 14) 3 rd Track MPs 218-226					\$87 (\$261 Total)
HSR-12	East of Seneca River Bridge <i>Adds trackage and increases operating speeds to support trip time reductions</i>	Track & Signal Additional Main Tracks Third Track MP310 (Weedsport) – MP359 (east end of Seneca River)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reduction	Continue Installation	COMPLETE (Start in Year 14) 3 rd Track MP 310 to MP 359				\$359 (\$547 Total)
HSR-14	Rochester “West Shore Bypass” <i>Routes freight trains away from downtown Rochester and Station area increasing capacity</i>	Track & Signal Additional Second Main Tracks “West Shore Bypass” Double MP347.4 (Palmyra) – CP369 (Rochester)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reductions	Continue Installation	Continue Installation	COMPLETE (Start in Year 14) nd Track MP 347 to MP 369			\$149 (\$297 Total)
HSR-19 EWC-34	Buffalo Terminal & Rochester Subdivision/Bufalo-Depew Station <i>Increased Capacity that will support trip time reductions Significant Trip Time Reduction</i>	Track & Signal & Station Additional Main Tracks Third Track MP399 (Corfu) to MP432 (Batavia), New Buffalo Depew Station improvements	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reductions		Start Installation (Complete in Year 21) 3 rd Track MP 399 to MP 432 New Buffalo-Depew Station	Continue Installation	Continue Installation	Continue Installation	\$600 (\$760 Total)
Total Investment Years 16 through 20									\$ 1,539 M

Exhibit 7-9 High Speed Rail Empire Corridor Program - Empire Gateway Improvements for Preferred Alternative: Year 21 - 25

Project Number	Project Area	Primary Project Type	Goals	Year 21 \$357 M	Year 22 \$390 M	Year 23 \$390 M	Year 24 \$389 M	Year 25 \$388 M	Estimated Project Cost (2017 M)
HSR-4	Mohawk Valley <i>Adds trackage to allow passenger trains faster operation on the multiple curves along the Mohawk River</i>	Track & Signal Additional Main Tracks in the Mohawk Valley Third track from MP184 (Fonda) – MP218 (Little Falls), fourth track from MPs 204-214.	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reductions	Continue Installation	Continue Installation	Continue Installation	Continue Installation	COMPLETE (Start in Year 18) 3 rd Track MPs 184-218 4 th Track MPs 204-214	\$344 (\$688 Total)
HSR-11, EWC-40	Syracuse Congestion Relief <i>Provides passenger trains their own station tracks to eliminate interferences with freight trains</i>	Track & Signal Additional Main Tracks Third track MP283 (East Syracuse) to MP310 (West Syracuse). Fourth track from 301-309, Syracuse Station MPs 290-294	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reductionImproved Station Operations		Start Installation	Continue Installation	Continue Installation	COMPLETE 3 rd Track MPs 283-310 4 th Track 301-309 Syracuse Station Trackage	\$770
HSR-15	Rochester Subdivision <i>Adds track capacity and supports better passenger train operations at Rochester</i>	Track & Signal Additional Main Tracks to “Main Line” Third Track MP 359 (Brighton) to MP 373 (Rochester)	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reductionImproved Station Operations	Start Installation	Continue Installation	Continue Installation	Continue Installation	COMPLETE 3 rd Track MP 359 to MP 373	\$639
HSR-19, EWC-34	Buffalo Terminal & Rochester Subdivision/Bufalo-Depew Station <i>Significant Trip Time Reduction</i>	Track & Signal & Station Additional Main Tracks CP399 (Corfu) to CP432 (Batavia), station improvements	<ul style="list-style-type: none">Capacity ImprovementBetter ReliabilityIncrease SpeedTrip Time reductionImproved Station Operations	COMPLETE (Start in Year 17) 3 rd Track MP 399 to MP 432 New Buffalo-Depew Station					\$160 (\$760 total)
Total Investment Years 21 through 25									\$ 1,914 M

Exhibit 7-10 High Speed Rail Empire Corridor Program - Staffing Plan for Supporting Service Growth

Train Service Improvements	Year 1 - 5	Year 6 – 10	Year 11 - 15	Year 16 – 20	Year 21 - 25	New Roundtrips
Trips Added	Round Trips Saratoga Springs/NYC Saratoga Springs / NYC Albany-Rensselaer / NYC Albany-Rensselaer / NYC	Round Trips Albany-Rensselaer / NFL	Round Trips Albany-Rensselaer / Syracuse Albany-Rensselaer / NFL	Round Trips Albany-Rensselaer / NFL Albany-Rensselaer / Syracuse	Round Trips Syracuse / NFL	ALB/NYC + 4
						ALB/NFL + 4 ALB/SYR + 1

Additional Infrastructure	Year 1 - 5	Year 6 – 10	Year 11 - 15	Year 16 – 20	Year 21 - 25	Total
Segment Completed	Most Projects between NYC and ALB COMPLETED SRP-01, ESC-02, ESC-04, EXC-05, SRP-03, ESC-12, ESC-13, ESC-14, ESC-18, ESC-20, ESC-35, ESC-36, ESC-01, ESC-30/ESC-33, ESC-47, HSR	HSR-6 (cont'd.) HSR-8/EWC-27 (cont'd.) ESC-47, ESC-30/ESC-33 HSR-2/HSR-3/EWC-3/EWC-5 HSR-7/EWC-26, HSR-9 HSR-16, EWC-18 HSR-20/EWC-21	HSR-9 (cont'd.) HSR-5 HSR-10 HSR-12 HSR-14 HSR-17 HSR-18	HSR-5 (cont'd.) HSR-12 (cont'd.) HSR-14 (cont'd.) HSR-4 HSR-19/EWC-34	HSR-4 (cont'd.) HSR-19/EWC-34 (cont'd.) HSR-11/EWC-40 HSR-15	All Segments COMPLETED
New Miles of Track	23	44	62	100	108	337
Upgraded Interlockings	15	13	8	8	12	56
Grade Crossings	- - -	17	38	46	71	172
Bridges	12	7	12	20	41	92

Job Creation	Year 1 - 5	Year 6 – 10	Year 11 - 15	Year 16 – 20	Year 21 - 25	Total
Train Crews	19	8	20	20	10	77
Train Movement Management	5	- - -	- - -	- - -	- - -	5
Stations	- - -	2	3	- - -	- - -	5
Track	- - -	12	12	6	18	44
Signal	- - -	25	12	12	18	67
Structures	3		- - -	3	6	12
Total	27	47	43	41	52	210

Exhibit 7-11 Empire Capital District Connection (New York City to Albany and Schenectady) Improvements – Staffing Plan for Supporting Service Growth (Years 1-5)

Train Service Improvements	Year 1	Year 2	Year 3	Year 4	Year 5	
Trips Added			1 – <u>New Round Trip</u> Saratoga Springs - New York City 1-Round Trip (ext.) Albany-Rensselaer - Saratoga 1 <u>New Round Trip</u> Albany-Rensselaer - New York City	<u>New Round Trip:</u> New York City - Albany 231 - 272	<u>New Round Trip:</u> Albany-Rensselaer - New York City 236 - 273	

Additional Infrastructure	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Segment Completed		ESC-04, ESC-14, ESC-18	ESC-35, ESC-36, ESC-01	ESC-05, SRP-03, ESC-13, ESC-20	SRP-01, ESC-02, ESC-1	
New Miles of Track		1		18	4	23
Upgraded Interlockings		1		11	3	15
Grade Crossings						
Bridges			1	6	5	12

Job Creation	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Train Crews			9	5	5	19
Train Movement Management		2	2		1	5
Stations						
Track						
Signal						
Structures		3				3
Total		5	11	5	6	27

Exhibit 7-12 Empire Gateway Improvements– Staffing Plan for Supporting Service Growth (Years 6-10)

Train Service Improvements	Year 6	Year 7	Year 8	Year 9	Year 10	
Trips Added					<u>New Round Trip:</u> Albany-Rensselaer - Niagara Falls 271 - 274	

Additional Infrastructure	Year 6	Year 7	Year 8	Year 9	Year 10	Total
Segments Completed	ESC-47, ESC-30/ESC-33, HSR-6, HSR-8/EWC-27		HSR-2/HSR-3/EWC-3/ EWC-5	HSR-16	HSR-7/EWC-26, EWC-18, HSR-20/EWC-21	
New Miles of Track	16	7	7	3	11	44
Upgraded Interlockings	2	2	2	2	5	13
Grade Crossings	2	7	8	-	-	17
Bridges	4	1	1	-	1	7

Job Creation	Year 6	Year 7	Year 8	Year 9	Year 10	Total
Train Crews					8	8
Train Movement						
Stations					2	2
Track	6	3	3			12
Signal	3	3	6	3	10	25
Structures						
Total	9	6	9	3	20	47

Exhibit 7-13 Empire Gateway Improvements– Staffing Plan for Supporting Service Growth (Years 11-15)

Train Service Improvements	Year 11	Year 12	Year 13	Year 14	Year 15	
Trips Added			<u>New Round Trip:</u> Albany-Rensselaer - Syracuse 273 - 272		<u>New Round Trip:</u> Albany-Rensselaer - Niagara Falls 285 - 284	

Additional Infrastructure	Year 11	Year 12	Year 13	Year 14	Year 15	Total
Segments Completed	HSR-9		HSR-17, HSR-18		HSR-10	
New Miles of Track	13	13	12	12	12	62
Upgraded Interlockings		2	2	2	2	8
Grade Crossings	5	11	10	6	6	38
Bridges			1	5	6	12

Job Creation	Year 11	Year 12	Year 13	Year 14	Year 15	Total
Train Crews			10		10	20
Train Movement						
Stations			2		1	3
Track			8			8
Signal			6		6	12
Structures						
Total			26		17	43

Exhibit 7-14 Empire Gateway Improvements– Staffing Plan for Supporting Service Growth (Years 16-20)

Train Service Improvements	Year 16	Year 17	Year 18	Year 19	Year 20	
Trips Added			<u>New Round Trip:</u> Albany-Rensselaer - Niagara Falls 287 - 286		<u>New Round Trip:</u> Albany-Rensselaer - Niagara Falls 270 - 275	

Additional Infrastructure	Year 16	Year 17	Year 18	Year 19	Year 20	Total
Segments Completed	HSR-5	HSR-12	HSR-14			
New Miles of Track	8	49	21	11	11	100
Upgraded Interlockings	2	2			4	8
Grade Crossings	5		11	15	15	46
Bridges	2	1	7	5	5	20

Job Creation	Year 16	Year 17	Year 18	Year 19	Year 20	Total
Train Crews			10		10	20
Train Movement						
Stations						
Track	3	3				6
Signal	3	3			6	12
Structures		3				3
Total	6	9	10		16	41

Exhibit 7-15 High Speed Rail Empire Corridor Program - Empire Gateway – Staffing Plan for Supporting Service Growth (Years 21-25)

Train Service Improvements	Year 21	Year 22	Year 23	Year 24	Year 25	
Trips Added					<u>New Round Trip:</u> Syracuse - Niagara Falls 271 - 274	

Additional Infrastructure	Year 21	Year 22	Year 23	Year 24	Year 25	Total
Segments Completed	HSR-19/EWC-34				HSR-4, HSR-11/ EWC-40 HSR-15	
New Miles of Track	11	24	24	24	25	108
Upgraded Interlockings	4		4		4	12
Grade Crossings	18	13	13	13	14	71
Bridges	5	9	9	9	9	41

Job Creation	Year 21	Year 22	Year 23	Year 24	Year 25	Total
Train Crews					10	10
Train Movement						
Stations						
Track	6		6		6	18
Signal	6		6		6	18
Structures			3		3	6
Total	12		15		25	52

High Speed Rail Empire Corridor Service Development Plan Errata

Exhibit 8-16 Annual Apportionment of Total Program Capital Costs (Empire Capital District Connection and Empire Corridor Gateway)

Empire Corridor Capital Program Annual Budget			
Year	Empire Capital District Connection	Empire Gateway	Total Program
1	\$177	\$133	\$310
2	\$220	\$133	\$353
3	\$220	\$133	\$354
4	\$309		\$309
5	\$238	\$60	\$298
6	\$48	\$265	\$313
7		\$332	\$332
8		\$379	\$379
9		\$311	\$311
10		\$396	\$396
11		\$320	\$320
12		\$321	\$321
13		\$320	\$320
14		\$355	\$355
15		\$363	\$363
16		\$337	\$337
17		\$359	\$359
18		\$314	\$314
19		\$265	\$265
20		\$264	\$264
21		\$357	\$357
22		\$390	\$390

Empire Corridor Capital Program Annual Budget			
Year	Empire Capital District Connection	Empire Gateway	Total Program
23		\$390	\$390
24		\$389	\$389
25		\$388	\$388
Total	\$1,213	\$7,274	\$8,487

Note: Capital costs shown above are for millions of dollars and exclude equipment costs (locomotives and train cars).

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High Speed Rail Empire Corridor Program - Investment Strategy for Preferred Alternative for Years 1 – 25: Empire Capital District Connection & Empire Gateway

Program Area	Year																									Totals
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
Empire Capital District Connection	\$177	\$220	\$220	\$309	\$238	\$48																				\$1,213
Empire Gateway	\$133	\$133	\$133		\$ 60	\$265	\$332	\$379	\$311	\$396	\$320	\$321	\$320	\$355	\$363	\$337	\$359	\$314	\$265	\$264	\$357	\$390	\$390	\$389	\$388	\$7,274
Total Annual Investment (Millions)	\$310	\$353	\$354	\$309	\$298	\$ 313	\$332	\$379	\$311	\$396	\$320	\$321	\$320	\$355	\$363	\$337	\$359	\$314	\$265	\$264	\$357	\$390	\$390	\$389	\$388	\$8,487

Note: Years 2 through 5 exclude equipment spending of \$85 million annually.

Project Number	Project Description – Location	Year																									Totals
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
SRP-01	Spuyten-Duyvil, MP 9-MP 13			\$30	\$30	\$30																					\$90
ESC-04	Rock Slope Stabilization	\$5	\$4																								\$9
ESC-05	New Interlockings CP 82 / CP99 / CP136		\$8	\$8	\$8																						\$24
SRP-03	Hudson Line Third Track, MPs 53-63				\$129																						\$129
ESC-12	Hudson Line High Capacity Signal System, MPs 33-76					\$100																					\$100
ESC-14	High Level Platforms - Hudson Station	\$22	\$22																								\$44
ESC-18	Tarrytown Pocket Track / Install 3 rd Rail CP-19 to CP25 & CP26 to CP32	\$3	\$2																								\$5
ESC-02	Hudson Line Bridge Replacement MP 85 – 118	\$61	\$61	\$61	\$60	\$60																					\$303
ESC-47	Hudson Line - New Signal System CP 75 – 169				\$48	\$48	\$48																				\$96
ESC-20	Hi-Level Platform -Rhinecliff Station		\$14	\$13	\$13																						\$40
ESC-13	Poughkeepsie Yard & Track #3 raised to 90 mph		\$22	\$21	\$21																						\$64
ESC-35	110 MPH: Speed Improvement Project; CP75 - CP114	\$43.5	\$43.5	\$43.5																							\$130.5
ESC-36	110 MPH: Speed Improvement Project; CP114 - CP124	\$43.5	\$43.5	\$43.5																							\$130.5
HSR	New Locomotives & Rolling Stock		\$85	\$85	\$85	\$85																					\$341
Total Annual Investment (Millions)		\$177	\$305	\$305	\$394	\$323	\$48																				\$341

Project Number	Project Description – Location	Years																									Total
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
ESC-1	Livingston Avenue Moveable Bridge Replacement	\$133	\$133	\$133																							\$400
ESC-30, ESC-33	Double Track Project, Schenectady, MPs 160-169					\$60	\$60																				\$120
HSR-2, HSR-3, EWC-3, EWC-5	Mohawk Valley 3 rd Track MPs 169-184, 4 th track, MPs 170-184, CP175-CP239-CP248, Amsterdam Station							\$332	\$332																		\$664
HSR-4	Fonda – Little Falls, 3 rd track MPs184-218, 4 th track MPs 204-214																		\$115	\$115	\$114	\$69	\$69	\$69	\$69	\$68	\$688
HSR-5	Little Falls – Herkimer, 3 rd track MPs 218-226														\$87	\$87	\$87										\$261
HSR-6	Herkimer – Utica, 3 rd track MPs 226-235						\$105																				\$105
HSR-7, EWC-26	Utica Station, 3 rd & 4 th track, MPs 235-239									\$66	\$66																\$132
HSR-8, EWC-27	Rome Station, 3 rd track MPs 239-246						\$100																				\$100
HSR-9	Rome – Verona, 3 rd Track, MPs 246-259										\$116	\$116															\$232
HSR-10	Vernon - East End of DeWitt Yard, 3 rd Track, MPs 259-283											\$104	\$104	\$104	\$104	\$104											\$520
HSR-11, EWC-40	Syracuse Station, 3 rd Track, MPs 283-310 4 th track, MPs 301-309																						\$193	\$193	\$192	\$192	\$770
HSR-12	3 rd Track, MPs 310-359, East end of Seneca River														\$94	\$94	\$200	\$159									\$547
HSR-14	Rochester (West Shore Bypass) 2 nd Track, MPs 347-369														\$70	\$78	\$50	\$50	\$49								\$297
HSR-15	Rochester, Third Track, MPs 359-373																					\$128	\$128	\$128	\$128	\$128	\$639

Project Number	Project Description – Location	Years																									Total
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
HSR-16	Rochester Station, 3 rd & 4 th Track, MPs 373-374.3 Rebuild CP-373									\$30																	\$30
HSR-17	West Rochester, 3 rd Track, MPs 374-388											\$100	\$99	\$99													\$298
HSR-18	Rochester Subdivision, 3 rd Track, MPs 388-399												\$118	\$117													\$235
HSR-19, EWC-34	South Byron – East Buffalo, 3 rd Track, MPs 399-432 Buffalo-Depew Station																	\$150	\$150	\$150	\$150	\$160					\$760
EWC-18	Niagara Falls Maintenance Facility								\$47	\$47	\$47																\$141
HSR-20, EWC-21	North Tonawanda – Niagara Branch 2 nd Track, MPs QDN2-7 and QDN17-22.8, Upgrade existing single track QDN25-28									\$168	\$167																\$335
Total Annual Investment (<i>Millions</i>)		\$133	\$133	\$133	0	\$60	\$265	\$332	\$379	\$311	\$396	\$320	\$321	\$320	\$355	\$363	\$337	\$359	\$314	\$265	\$264	\$357	\$390	\$390	\$389	\$388	\$7,274

High Speed Rail Empire Corridor Program – 25-Year Capital Improvement Program

Project Number	Project Name	Project Description	Corridor	Operator	City/Town	Counties	Project Type	Goals	To Mile Post	From Mile Post	Estimated Cost (\$2017)
SRP-01 (ESC-19,ESC 21)	Empire Line - Spuyten Duyvil 2nd Track	This project will add second track between Mile Post 9 and Mile Post 13, including across the Spuyten Duyvil Movable Bridge, eliminating conflicts between Amtrak trains traveling in opposite directions, and provide Amtrak trains higher speed crossovers at Control Point 13, where Amtrak trains to and from New York converge/diverge with MetroNorth Trains to and from Grand Central Station, which will decrease delays.	Empire South	Amtrak MetroNorth	Bronx	Bronx	Track, Signals, Interlockings	Reduce Delay, Add Capacity, Improve Operation	9.32	13	\$90,229,715
ESC-18	Hudson Line - Tarrytown 3rd Track and Interlockings	This project will construct new Tarrytown 3rd track and new Control Point 24. This project will enhance capacity and improve reliability by providing for trains to change direction at the existing Control Point 25 without having to change ends while blocking the mainline track.	Empire South	MetroNorth	Tarrytown	Westchester	New or restored sidings/passing tracks	Reduce Delay, Add Capacity, Improve Operation	25	24	\$5,388,547
SRP-03 (ESC17, ESC-25)	Hudson Line - Croton Harmon 3rd Track and Interlockings	This project will provide capacity, and minimizing delays by constructing 3rd track beginning at Control Point 53 (Hudson Highlands) to Control Point 59 (Beacon) and from Control Point 61 (Beacon) to Control Point 63 (Chelsea). This project will also construct double-track section between Control Point 63 (Chelsea) and Control Point 72 (Poughkeepsie). This project will also construct new high speed cross-overs at interlockings including Control Point 53, Control Point 58, new Control Point 63 (replacing Control Point 61), and Control Point 72. This project will include signal upgrades needed to support the additional track and new interlockings.	Empire South	MetroNorth	Willsboro, Westport, Essex	Essex	Track, Signals, Interlockings	Reduce Delay, Add Capacity, Improve Operation	63	53	\$128,528,340
ESC-12	Hudson Line High Capacity Signal System - Croton Harmon to Poughkeepsie	This project will construct a new signal system capable of closer-headway between passenger trains between Croton-Harmon and Poughkeepsie, where the existing signal block spacing is far apart, in order to increase capacity. The new signal system will also all freight trains to continue to operate at speed up to 50 MPH.	Empire South	MetroNorth	Poughkeepsie	Dutchess, Putnam, Westchester	Communication, Signaling, and Control	Reliability, Capacity	76	33	\$99,910,482
ESC-13	Poughkeepsie Capacity Improvements, Poughkeepsie Yard	This project will reduce congestion between Amtrak trains and MetroNorth Commuter trains by installing two new interlockings, adding three new yard tracks, upgrading, and realigning existing tracks. This project will also consolidate and reconfigure storage tracks to reduce train movements across the main lines. The new Track 3 will provide capacity for MetroNorth trains originating and terminating in Poughkeepsie while allowing for Amtrak trains to have the through movement on Tracks 1 and 2. The area between Mile Post 76 and Mile Post 71 consists of Poughkeepsie Station, which is serviced by both Amtrak and MetroNorth and the MetroNorth Poughkeepsie Yard. Currently passenger trains are delayed in this area due to interference with commuter trains, the proximity of the station to the yard, and the existing yard configuration, which requires trains to cross the mainline tracks to access the yard contribute to these delays.	Empire South	MetroNorth	Poughkeepsie	Dutchess	New or restored sidings/passing tracks	Reduce Delay, Add Capacity, Improve Operation	76	71	\$64,155,768

Project Number	Project Name	Project Description	Corridor	Operator	City/Town	Counties	Project Type	Goals	To Mile Post	From Mile Post	Estimated Cost (\$2017)
ESC-20	Rhinecliff Station High Level Platform, Vertical Circulation	This project will replacing the existing low-level platform with a new high level platform at Rhinecliff Station. This project will also include necessary drainage work, replace the platform canopy, install new lighting, and replacing the elevator and stairs to and from the station (vertical circulation), construct areas of refuge and emergency egress as required by code. The project will also rehabilitate the interlocking at Control Point 89 and install a new interlocking at Control Point 88 to facilitate platform construction and improve overall reliability on the Hudson Line. This project will also rehabilitate and realign Tracks 1 and 2 between the two interlockings as necessary to accommodate the new platform footprint.	Empire South	Amtrak	Rhinecliff	Dutchess	High Level Platform	Reliability, Safety, Reduce Trip Time	89	89	\$40,318,425
ESC-14	Hudson Station Passenger Grade Crossing Elimination, New High Level Platform and Vertical Circulation	This project will eliminate the need for passengers to cross active tracks to board the train, by constructing a new high level platform with stairs, elevators, pedestrian bridge at the Hudson Station. This project will improve train operations by allowing two trains to serve the station at the same time. Currently, the ticket agent must use a “Wheel Chair Lift” to raise the passenger from the platform to the vestibule of the passenger coach, this project will provide for ADA compliant level boarding of trains. The benefits of this project include reducing the station dwell time for accommodating passengers boarding and exiting trains, and in conjunction with the project at Rhinecliff Station, this project will provide for all train stations between New York City and Albany-Rensselaer to have high level platforms.	Empire South	Amtrak	Hudson		Grade Crossing Elimination, High Level Platform, Vertical Circulation	Reliability, Safety, Reduce Trip Time	115	114	\$44,370,183
ESC-04	Hudson Line - Slope Stabilization	This project will improve reliability by stabilizing slopes adjacent to the tracks at 10 locations (5 locations between, Mile Posts 105.3-106, one location at Mile Post 119.5, and 4 locations at Mile Posts 128.1-130), and upgrading slide detector fences to improve safety and reduce delays. Currently, there are locations on the Hudson Line, where rock/earth falls onto the tracks from unstable slopes, causing train delays. This project will enhance safety for rail passengers, railroad employees, and the surrounding community by preventing rocks/earth from falling onto the tracks, which has the potential to delay trains through speed restrictions imposed by the slide fences, and to cause train derailments.	Empire South	Amtrak		Columbia, Dutchess	Safety, State of Good Repair	Operational Benefits, Safety	130	105	\$8,739,582
ESC-05	Hudson Line - New Interlockings CP 82 / 99 / 136 (north of Hyde Park, Tivoli, and Stony Point)	This project will construct three new interlockings, improving reliability by reducing spacing between the existing interlockings, improving dispatching options to meet and pass trains, especially during routine maintenance, which will decrease delays. Approximate locations on the Hudson Line are north of Hyde Park, Tivoli, and Stony Point.	Empire South	Amtrak	Hudson, Rhinecliff, Germantown	Columbia, Dutchess	Signal and Interlockings	Reduce Delay, Add Capacity, Improve Operation	136	82	\$23,881,294

Project Number	Project Name	Project Description	Corridor	Operator	City/Town	Counties	Project Type	Goals	To Mile Post	From Mile Post	Estimated Cost (\$2017)
ESC-36	Hudson Line Speed Improvements Phase 1 CP-75 to CP-114	This project will straightening vertical and horizontal curves to permit higher speed, realign tracks to reduce curvature, increase spiral lengths, and increase superelevation in order to facilitate speed increases on sections of the Hudson Line. This project includes locations where realigned track curve corrections fall within the existing railroad right-of-way. This project will also include surfacing and tie replacement to improve track resiliency, and keep the track within the higher maintenance standards required for 110 MPH operations. This project will also rehabilitate existing bridges to facilitate new track alignments, and comply with the track maintenance standards for operating at higher speeds. Within the curve realignment sections, the condition of the tracks and bridges will be brought to a State of Good Repair. This project will also include needed signal upgrades, including signal block length reductions, along with upgrades of grade crossing warning devices.	Empire South	Amtrak		Columbia, Dutchess	Track, Speed Improvements, State of Good Repair	Increase speed, reduce trip time	114	75	\$131,399,840
ESC-35	Hudson Line Speed Improvements Phase 2: CP-114 to CP-125	This project will straightening vertical and horizontal curves to permit higher speed, realign tracks to reduce curvature, increase spiral lengths, and increase superelevation in order to facilitate speed increases on sections of the Hudson Line. This project includes locations where realigned track curve corrections may require additional right-of-way. This project will also include surfacing and tie replacement to improve track resiliency, and keep the track within the higher maintenance standards required for 110 MPH operations. This project will also rehabilitate existing bridges to facilitate new track alignments, and comply with the track maintenance standards for operating at higher speeds. Within the curve realignment sections, the condition of the tracks and bridges will be brought to a State of Good Repair. This project will also include needed signal upgrades, including signal block length reductions, along with upgrades of grade crossing warning devices.	Empire South	Amtrak		Columbia	Track, Speed Improvements, State of Good Repair	Increase speed, reduce trip time	125	114	\$131,399,840
ESC-02	Hudson Line - Bridge Replacement Project	This project will replace 5 bridges on the Hudson Line (Mile Post 85.45 (Staatsburg), Mile Post 97.35 (Tivoli Bay), Mile Post 108.18 (Jansen Kill), Mile Post 118.30 (Stockport), Mile Post 118.58 (Stockport)) including replacing fixed decks with ballasted decks to remove/prevent speed restrictions, improving track geometry and bridge conditions to increase resiliency.	Empire South	Amtrak		Columbia, Dutchess	Structures	Resiliency, State of Good Repair, Speed Increases	118.58	84.45	\$302,730,000
ESC-47	Hudson Line New Signal System from CP 75 to CP 169	This project will install signalization to increase track capacity, including new signal houses and wayside signal equipment from Schenectady to Hoffmans and from Control Point 143, Rensselaer, to Poughkeepsie.	Empire South	Amtrak			Communication, Signaling, and Control	Operational Benefits, Safety	169	75	\$140,000,000
ESC-01	Livingston Avenue Bridge Replacement	This project will replace the Livingston Avenue Rail Bridge that spans the Hudson River between the cities of Albany and Rensselaer, fortifying a critical link for Passenger Rail Service in New York State. This bridge provides the only upstate New York passenger rail crossing of the Hudson River and is vital to connecting all points west from Niagara Falls to New York City by rail. The bridge was originally constructed in 1866 and has significant loading and speed restrictions. The new bridge will replace the deficient moveable bridge and improve safety, reliability, travel time. This project will also remove speed and weight restrictions imposed by the current structure, increase capacity and improving resiliency for passenger rail service.	Empire West	Amtrak	Albany, Rensselaer	Albany, Rensselaer	Bridge, Safety, State of Good Repair, Reliability	Safety, Capacity, State of Good Repair	143	143	\$400,000,000

Project Number	Project Name	Project Description	Corridor	Operator	City/Town	Counties	Project Type	Goals	To Mile Post	From Mile Post	Estimated Cost (\$2017)
ESC-33	Schenectady - Hoffmans Double Track	This project will construct a 2nd main track between Schenectady and Hoffmans, NY. This project includes bridge rehabilitation for three (3) undergrade bridges. This project will improve on time performance, reduce train delays, and add capacity.	Empire West	Amtrak	Schenectady, Pattersonville	Schenectady	Track, Signals, Interlockings	Reduce Delay, Add Capacity, Improve Operation	169	160	\$99,705,372
ESC-30	Empire Corridor Congestion Relief, Reconfigure CP 169	This project will reconfigure the junction of Empire Corridor with the CSX Selkirk Branch at CP169 (Hoffmans). Freight trains traveling west enter the Empire Corridor at CP 169 and exit to reach the CSX Selkirk Yard. Passenger trains servicing upstate cities including Syracuse, Rochester, Buffalo, and Niagara Falls, enter the Empire Corridor West from the Hudson Line at CP 169 and continue on to Albany and New York City when traveling south. This project includes the construction of an additional track along the 110 mph section of the Hudson Subdivision in Colonie, Albany County.	Empire West	Amtrak	Scotia	Schenectady	New or restored sidings/passing tracks	Reduce Delay, Add Capacity, Improve Operation	169	169	\$19,476,810
HSR-02	3rd Track - Hoffmans to Amsterdam (MP 169 to 179) and 4th track from MPs 170 to 174.	This project will construct new 3rd and 4th tracks between Hoffmans and Amsterdam. The project will include two new bridges, signal and interlocking work, embankment, retaining walls, drainage and erosion control measures. The project also includes 9 grade crossing upgrades/replacements. This project requires Right of Way acquisition.	Empire West	CSXT	Scotia, Schenectady, Amsterdam, Glenville	Montgomery, Schenectady	Track, Signals, Interlockings	Reduce Delay, Add Capacity, Improve Operation	174	160	\$382,037,326
EW-03	Amsterdam Station, Platform and Interlockings Project	This project will construct a new Amsterdam Station, new high level platform and new interlockings. This project will also include necessary drainage work, provide elevators and stairs to and from the station (vertical circulation), construct areas of refuge and emergency egress as required by code. This project will also rehabilitate and realign Tracks as necessary to accommodate the new platform footprint. This project will improve reliability and provide ADA compliant level boarding.	Empire West	CSXT	Amsterdam	Montgomery	Station, Platform, Track and Interlockings	Reduce Delay, Add Capacity, Improve Operation	178	178	\$16,755,174
HSR-03	3rd and 4th Track - Kellogg's Yard to Danascara Creek	This project will construct new 3rd and 4th track from Kellogg's Yard to Danascara Creek. (Mile Post 173.9 to Mile Post 183.5) This project also includes two new bridges at Mile Post 181- Mile Post 182 and at Danascara Creek, signal system improvements and interlockings, embankment, retaining walls, drainage and erosion control measures. This project also includes improvements at 15 grade crossing locations. This project requires Right of Way acquisition.	Empire West	CSXT	Tribes Hill, Fort Johnson, Amsterdam	Montgomery	New Track, Signals, Interlockings	Reduce Delay, Add Capacity, Improve Operation	184	174	\$247,677,837
HSR-04	3rd Track Fonda to Little Falls (Mile Post 184 to Mile Post 218) 4th Track from Mile Posts 204-214	This project will construct a new 3rd track from Fonda to Little Falls (MP 184 to MP 218). This project includes 17 new bridges, including bridges over Cayadutta Creek, Knauderack Creek, Mohawk River Creek, and a major structure at East Canada Creek. This project also includes signal and interlocking improvements, embankment, retaining walls and other structures, drainage, and erosion control measures. This project will also include upgrades to approximately 45 grade crossings. This project requires Right of Way acquisition.	Empire West	CSXT	Yost, Tribes Hill, Nelliston, Fonda, St. Johnsville, Palatine, Mohawk, Manheim, Little Falls	Herkimer, Montgomery	New Track, Signals, Interlockings	Reduce Delay, Add Capacity, Improve Operation	218	184	\$688,100,370

Project Number	Project Name	Project Description	Corridor	Operator	City/Town	Counties	Project Type	Goals	To Mile Post	From Mile Post	Estimated Cost (\$2017)
HSR-05	3rd Track, Little Falls to Herkimer, from Mile Post 218 to Mile Post 225.9.	This project will construct new 3rd track from Mile Post 218 to Mile Post 225.9. This project also Includes two new bridges, including a major structure at Mile Post 222.5 West Canada Creek. The project also includes new signals and interlockings, embankment, retaining walls and other structures, and drainage and erosion control measures. This project includes improvements at 5 grade crossing locations.	Empire West	CSXT	Herkimer	Herkimer	New Track, Signals, Interlockings	Reduce Delay, Add Capacity, Improve Operation	226	218	\$260,795,039
HSR-06	3rd Track, Herkimer to Utica, from Mile Post 226 to Mile Post 235	This project will construct new 3rd track from Herkimer to Utica, Mile Post 226 to Mile Post 235. The project also includes new signals and interlockings, embankment, retaining walls and other structures, and drainage and erosion control measures.	Empire West	CSXT	Herkimer, Frankfort, Utica	Herkimer, Oneida	Track, Signals, Interlockings	Reduce Delay, Add Capacity, Improve Operation	226	235	\$105,000,000
EWC-26	Utica Station -Track, Interlocking, High Level Platform, Vertical Circulation	This project will construct new high-level side platforms, and realign the tracks at Utica Station. This project will also include necessary drainage work, provide elevators and stairs to and from the station (vertical circulation), construct areas of refuge and emergency egress as required by code. This project will also rehabilitate and realign tracks as necessary to accommodate the new platform footprint. This project will improve reliability and provide ADA compliant level boarding.	Empire West	CSXT	Utica	Oneida	Station, Platform, Track and Interlockings	Reliability, Safety, Reduce Trip Time	238	238	\$10,288,010
HSR-07	3rd and 4th Tracks, Utica to Yorkville from Mile Post 235 to Mile Post 239.1	This project will construct new 3rd and 4th track from Utica to Yorkville (Mile Post 235 to Mile Post 239.1). This project includes signal improvements, new interlockings, embankment, retaining walls and other structures, drainage, and erosion control measures.	Empire West	CSXT	Utica	Oneida	New Track, Signals, Interlockings	Reduce Delay, Add Capacity, Improve Operation	239	235	\$121,660,766
HSR-08	3rd Track, Yorkville to Whitestown, from Mile Post 239 to Mile Post 246.	This project will construct new 3rd tracks from Yorkville to Whitestown (Mile Post 239 to Mile Post 246). This project includes 4 new bridges, signal improvements, new interlockings, embankment, retaining walls and other structures, drainage, and erosion control measures. This project also includes upgrades at 2 grade crossing locations. This project requires Right of Way acquisition.	Empire West	CSXT	Whitestown	Oneida	New Track, Signals, Interlockings	Reduce Delay, Add Capacity, Improve Operation	246	239	\$94,023,813
EWC-05	Mohawk Valley Empire Corridor Congestion Relief (Control Point 175, Control Point 239 and Control Point 248) Amsterdam to Solvay (Mile Post175 to Mile Post 294)	This project will improve travel times, operational capacity, and safety for intercity passenger trains and freight trains by upgrading signals, control points, and interlockings along approximately 76 miles of the Selkirk and Mohawk Subdivisions.	Empire West	CSXT	Utica, Amsterdam	Herkimer, Montgomery, Oneida	Communication, Signaling, and Control	Reduce Delay, Add Capacity, Improve Operation	251	169	\$16,589,691

Project Number	Project Name	Project Description	Corridor	Operator	City/Town	Counties	Project Type	Goals	To Mile Post	From Mile Post	Estimated Cost (\$2017)
EWC-27	Rome Station - Track, Interlocking, High Level Platform, Vertical Circulation	This project will construct new high-level platform and new interlockings. This project will also include necessary drainage work, provide elevators and stairs to and from the station (vertical circulation), construct areas of refuge and emergency egress as required by code. This project will also rehabilitate and realign tracks as necessary to accommodate the new platform footprint. This project will improve reliability and provide ADA compliant level boarding.	Empire West	CSXT	Rome	Oneida	Station, Platform, Track and Interlockings	Reliability, Safety, Reduce Trip Time	251	251	\$6,429,863
HSR-09	3rd Track Rome to Verona, from Mile Post 246 to Mile Post 259	This project will construct a new 3rd track from Rome to Verona (Mile Post 246 to Mile Post 259). This project includes 7 new bridges including bridges over the Mohawk River. The project includes signal improvements and new interlockings, embankment, retaining walls and other structures, drainage, and erosion control measures. This project also includes upgrades to 5 grade crossing locations. This project requires Right of Way acquisition.	Empire West	CSXT	Rome, Verona	Oneida	New Track, Signals, Interlockings	Reduce Delay, Add Capacity, Improve Operation	259	246	\$231,893,570
HSR-10	3rd Track Verona to Lenox, from Mile Post 259 to Mile Post 283	This project will construct a new 3rd track from Verona to Lenox, Mile Post 259 to Mile Post 283. This project includes 10 new bridges, including Oneida Creek and a Flyover at DeWitt Yard. This project includes signal improvements, new interlockings, embankment, retaining walls and other structures, drainage and erosion control measures. This project also includes upgrades at 12 grade crossing locations. This project requires Right of Way acquisition.	Empire West	CSXT	Verona, Sullivan, Manlius, Lenox	Madison, Oneida, Onondaga	New Track, Signals, Interlockings	Reduce Delay, Add Capacity, Improve Operation	283	259	\$520,104,607
EWC-40	Syracuse Congestion Relief (Multiple Phases)	This project will increase capacity by providing additional freight capacity between DeWitt and Belle Isle Pocket Yard. This project will add track capacity in the vicinity of Syracuse Station and reconfigure signals at the station including new interlockings. This project will also replace the bridge over Park Street with multiple bridges capable of carrying 5 tracks. This project will construct a new high level platform capable of allowing two trains to service the station at the same time at Syracuse Station.	Empire West	CSXT	Syracuse	Onondaga	New Track, Signals, Interlockings, New Platform, Vertical Circulation	Operational Benefits, Safety	294	290	\$150,000,000
HSR-11	3rd Track Salina to Camillus, Mile Post 283 to Mile Post 310, 4th Track between Mile Post 301 to Mile Post 309	This project will construct a new 3rd track from Salina to Camillus (Mile Post 283 to Mile Post 310) and a new 4th track from Werners to Jordan (Mile Post 301 to Mile Post 309). This project includes 9 new bridges. This project includes signal improvements, new interlockings, embankment, retaining walls and other structures, drainage and erosion control measures. This project also includes upgrades at 6 grade crossing locations. This project requires Right of Way acquisition.	Empire West	CSXT	Salina, DeWitt (De Witt), Camillus	Onondaga	New Track, Signals, Interlockings	Reduce Delay, Add Capacity, Improve Operation	310	283	\$620,883,861
HSR-12	3rd Track Weedsport to Wayneport, Mile Post 310 to Mile Post 359	This project will construct a new 3rd track from Weedsport to Wayneport (Mile Post 310 to Mile Post 359). This project includes signal improvements, new interlockings, embankment, retaining walls and other structures, drainage and erosion control measures.	Empire West	CSXT	Camilus/Fox Ridge	Onondaga	New Track, Signals, Interlockings	Reduce Delay, Add Capacity, Improve Operation	310	359	\$547,430,000
HSR-14	2nd Track Palmyra to Rochester from Mile Post 347.4 to Mile Post 368.8	This project will install new 2nd track from Palmyra to Rochester, Mile Post 347.4 to Mile Post 368.8. This project also includes 7 new bridges. This project includes new interlockings, embankment, retaining walls and other structures, and drainage and erosion control measures. This project also includes upgrades at 11 grade crossing locations.	Empire West	CSXT	Pittsfield, Perinton, Henrietta, Chili, Brighton	Monroe	New Track, Signals, Interlockings	Operational Benefits	369	348	\$297,014,182

Project Number	Project Name	Project Description	Corridor	Operator	City/Town	Counties	Project Type	Goals	To Mile Post	From Mile Post	Estimated Cost (\$2017)
HSR-15	3rd Track Fairport to Brighton from Mile Post 359 to Mile Post 373	This project will construct new 3rd track from Fairport to Brighton (Mile Post 359 to Mile Post 373). This project also includes 9 new bridges. This project includes signal improvements, new interlockings, embankment, retaining walls and other structures, drainage and erosion control measures. This project also includes upgrades at 2 grade crossing locations. This project requires approximately 20 acres of Right of Way acquisition.	Empire West	CSXT	Fairport, Rochester, Perinton, Brighton	Monroe	New Track, Signals, Interlockings	Reduce Delay, Add Capacity, Improve Operation	373	359	\$638,720,261
HSR-16	3rd Track and 4th Track Rochester from MP 373 to 374.3	This project will construct new 3rd and 4th tracks in Rochester from Mile Post 373 to Mile Post 374.3. This project includes signal improvements, new interlockings, embankment, retaining walls and other structures, drainage and erosion control measures.	Empire West	CSXT	Rochester	Monroe	New Track, Signals, Interlockings	Reduce Delay, Add Capacity, Improve Operation	374	373	\$30,129,452
HSR-17	3rd Track Churchville to Gates from MP 374.3 to MP 388	This project will construct a new 3rd track from Churchville to Gate (Mile Post 374.3 to Mile Post 388). This project includes 6 new bridges. This project includes signal improvements, new interlockings, embankment, retaining walls and other structures, drainage, and erosion control measures. This project also includes upgrades to 11 grade crossing locations. This project requires Right of Way acquisition.	Empire West	CSXT	Churchville, Rochester, Gates	Monroe	New Track, Signals, Interlockings	Reduce Delay, Add Capacity, Improve Operation	388	374	\$298,048,055
HSR-18	3rd Track Gates to Bergen from MP 388 to 399	This project will construct 3rd track from Gates to Bergen (Mile Post 388 to Mile Post 399). This project includes 1 new bridge. This project includes signal improvements, new interlockings, embankment, retaining walls and other structures, drainage, and erosion control measures. This project also includes upgrades to 10 grade crossing locations. This project also requires Right of Way acquisition.	Empire West	CSXT	Churchville, Byron, Bergen	Genesee, Monroe	New Track, Signals, Interlockings	Reduce Delay, Add Capacity, Improve Operation	399	388	\$235,307,988
EWC-34	New Buffalo-Depew Station, Track, Interlocking, High Level Platform, Vertical Circulation	This project will construct a new Buffalo Depew Station, and new high-level platform and new interlockings. This project will also include necessary drainage work, provide elevators and stairs to and from the station (vertical circulation), construct areas of refuge and emergency egress as required by code. This project will also rehabilitate and realign tracks as necessary to accommodate the new platform footprint. This project will improve reliability and provide ADA compliant level boarding.	Empire West	CSXT	Depew	Erie	Station, Platform, Track and Interlockings	Reliability, Safety, Reduce Trip Time	431	431	\$9,001,578
HSR-19	3rd Track Corfu to Batavia from MP 399 to MP 432	This project will construct a new 3rd track from Corfu to Batavia (Mile Post 399 to Mile Post 432). This project also includes 15 new bridges. This project includes signal improvements, new interlockings, embankment, retaining walls and other structures, drainage, and erosion control measures. This project also includes upgrades to 38 grade crossing locations. This project requires Right of Way acquisition.	Empire West	CSXT	Corfu, Alden, Lancaster, Darien, Batavia	Erie, Genesee	New Track, Signals, Interlockings	Reduce Delay, Add Capacity, Improve Operation	432	399	\$751,299,121
HSR-20 (EWC-17)	Niagara Branch Double Track	This project will construct 2nd track on the Niagara Branch in Buffalo from Mile Post QDN 2 to Mile Post QDN 7 and from Buffalo to North Tonawanda, Mile Post QDN 17 to Mile Post QDN 22.8. This project includes signal improvements, new interlockings, embankment, retaining walls or other structures, drainage, and erosion control measures.	Empire West - Niagara Branch	CSXT	Black Rock, Wheatfield, Niagara Falls	Erie, Niagara	Track, Signals, Interlockings	Reduce Delay, Add Capacity, Improve Operation	2	22.8	\$333,000,000

Project Number	Project Name	Project Description	Corridor	Operator	City/Town	Counties	Project Type	Goals	To Mile Post	From Mile Post	Estimated Cost (\$2017)
EWC-18	Niagara Falls High Speed Rail Maintenance Facility	This project will construct a new maintenance facility to provide shore power, potable water, inspection, cleaning, and light repair capabilities. The project will also add storage tracks and a train shed. The facility will be designed to be scalable, initially constructed to accommodate existing service levels, but with an ability to expand in the future.	Empire West - Niagara Branch	Amtrak	Niagara Falls	Niagara	Support Facilities	Operational Benefits, State of Good Repair	27	27	\$141,000,000
EWC-21	Niagara Falls Track Improvements (Mile Post QDN 25 to Mile Post QDN 28)	This project will improve reliability by upgrading the existing track between the Niagara Falls Maintenance Facility and the Niagara Falls Station.	Empire West - Niagara Branch	CSXT	Niagara Falls		Track Rehabilitation	State of Good Repair, Safety	28	25	\$2,103,740

Appendix I Agency Correspondence

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1. Cooperating Agencies Correspondence

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1.1 Cooperating Agency Invitation Letters

Index of Cooperating Agency Invitation Letters

Valenstein, David, Division Chief, Environment and Systems Planning, “High Speed Rail Empire Corridor Project, Tier I Environmental Impact Statement, New York City to Buffalo/Niagara Falls,” Letter, May 3, 2011 to Mr. Gary Kassof, U.S. Coast Guard, May 3, 2011.

Corrado, Marie, Director of Major Projects, State of New York Department of Transportation, “PIN S937.51.171, High Speed Rail Empire Corridor Project, Tier 1 Environmental Impact Statement, New York City to Buffalo/Niagara Falls,” Letter, October 7, 2010, to the following:

Ms. Maria Chau
Federal Highway Administration (FHWA)
Leo W. O'Brien Federal Bldg. Rm 719
Clinton Ave & North Pearl Street
Albany, NY 12207

Lingard Knutson
US Environmental Protection Agency (EPA)
290 Broadway, 25th floor
New York, NY 10007

Ms. Brigid Hynes-Cherin
Federal Transit Administration (FTA)
One Bowling Green, Room 429
New York, NY 10004

Mr. Leonard Houston
US Army Corps of Engineers (USACE)
26 Federal Plaza, Room 2109
New York, NY 10278

Ms. Anne Reynolds
NYS Department of Environmental Conservation (NYSDEC)
625 Broadway
Albany, NY 12233

Mr. Kevin Millington
NYS Department of State (NYSDOS)
41 State Street
Attn: Coastal Management Program
Albany, NY 12231

Ms. Anne Secord
US Fish & Wildlife Service (FWS)
3817 Luker Rd.
Cortland, NY 13045

Mr. Ronald Anzalone

Advisory Council on Historic Preservation (ACHP)
Old Post Office Building
1100 Pennsylvania Ave, N.W. Suite 809
Washington DC, 20004

Mr. William Hollister
Amtrak (National Railroad Passenger Corporation)
Amtrak General Offices, 525 East Street
Rensselaer, NY 12144

Mr. Peter Colosi
National Marine Fisheries Service (NMFS)
55 Great Republic Drive
Gloucester, MA 01930-2298

Mr. Andy Beers
NYS Office of Parks, Recreation & Historic Preservation
Agency Building 1
Albany, NY 12238

Mr. Gary Kassof
US Coast Guard
Battery Park Building
1 South St.
New York, NY 10004-5073

Corrado, Marie, Director of Major Projects, State of New York Department of Transportation, "PIN S937.51.171, High Speed Rail Empire Corridor Project, Tier 1 Environmental Impact Statement, New York City to Buffalo/Niagara Falls," Letter, October 12, 2010, to the following:

Mr. Dennis Reidenbach, Northeast Regional Director
National Park Service
U.S. Custom House
200 Chestnut Street, 5th Floor
Philadelphia, PA 19106

Ms. Ruth Pierpont, Director
New York State Historic Preservation Office
Peeples Island, P.O. Box 189
Waterford, NY 12188

Mr. Bob Ewing
New York State Department of Environmental Conservation
Division of Environmental Permits
625 Broadway, 4th Floor
Albany, NY 12233



U.S. Department
of Transportation
**Federal Railroad
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

MAY - 3 2011

Mr. Gary Kassof
US Coast Guard
Battery Park Building
1 South St.
New York, NY 10004-5073

Re: High Speed Rail Empire Corridor Project
Tier 1 Environmental Impact Statement
New York City to Buffalo/Niagara Falls

Dear Mr. Kassof:

The Federal Railroad Administration (FRA), in cooperation with the New York State Department of Transportation (NYSDOT), is preparing a Tier 1 Environmental Impact Statement (EIS) that will study and document proposed improvements to intercity passenger rail services along the 463-mile Empire Corridor, beginning at Penn Station in New York City, New York County and proceeding north to Poughkeepsie (Dutchess County) and Albany (Albany County) then turning west to Schenectady (Schenectady County), Utica (Oneida County), Syracuse (Onondaga County), Rochester (Monroe County), Buffalo (Erie County) and terminating at Niagara Falls (Niagara County).

The objective is to make corridor level decisions regarding the level of intercity passenger rail service provided in the corridor, including, among other factors, variations in train frequency, trip time, and on-time performance. Alternatives that improve the on-time performance and increase the average operating speeds up to a maximum authorized speed (MAS) of 110 mph for passenger rail will be evaluated.

FRA is the lead Federal agency and the New York Department of Transportation is the joint lead state agency for this project. The FRA and the NYSDOT will use a tiered process, as provided for in 40 CFR 1508.28, in the completion of the environmental review of the project. The initial phase ("Tier 1 EIS") of this process will address broad rail service issues and proposals. Subsequent phases or tiers will analyze, at a greater level of detail, site-specific projects encompassed by the decisions made in Tier 1. The EIS will be developed pursuant to the National Environmental Policy Act of 1969 (NEPA), as amended, 42 U.S.C. 4321 et seq., the Council on Environmental Quality NEPA implementing regulations, 40 CFR parts 1500-1508, FRA NEPA procedures, 64 FR 28545 (May 26, 1999), and the New York State Environmental Quality Review Act (SEQR).

FRA is, in accordance with 40 C.F.R. 1501.6, requesting the involvement of the US Coast Guard (Coast Guard) as a cooperating agency with a focus on those areas within Coast Guard jurisdiction.

As a cooperating agency pursuant to NEPA, your involvement in the preparation of the EIS may include the following activities:

1. Assist in identifying interest groups;
2. Participate in coordination meetings;
3. Raise concerns about any relevant technical studies that may be needed for the project;
4. Provide information on alternatives;
5. Assist the lead agency in determining appropriate and practicable mitigation. These measures should reflect avoidance, minimization, and compensation;
6. Review pre-draft and pre-final environmental documents and comment as early as practicable on environmental and socioeconomic resources located within the project area, particularly sections relevant to the Coast Guards purview;
7. Identify issues, concerns and any technical studies that the EIS should address to support the Coast Guard in fulfilling its NEPA or other responsibilities and any other requirements regarding jurisdictional permits and/or other approvals.

We look forward to your response to our request to be a cooperating agency, and to working with you to advance this project. The favor of a reply is requested by May 27, 2011.

If you have any questions or would like to discuss in more detail the project or our agencies' respective roles and responsibilities during the preparation of this EIS, please contact Colleen Vaughn of my staff at colleen.vaughn@dot.gov or (202) 493-6096, or myself at (202) 493-6368. The NYSDOT project manager for the Empire Corridor Tier 1 EIS is David Chan, who can be reached via phone at (518) 485-1918 or email at dchan@dot.state.ny.us.

Sincerely,



David Valenstein
Division Chief
Environment and Systems Planning

CC: Mr. David Chan, NYS DOT



STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION
ALBANY, N.Y. 12232
www.nysdot.gov

STANLEY GEE
ACTING COMMISSIONER

DAVID A. PATERSON
GOVERNOR

October 7, 2010

Ms. Maria Chau
Federal Highway Administration (FHWA)
Leo W. O'Brien Federal Bldg. Rm 719
Clinton Ave & North Pearl Street
Albany, NY 12207

Re: PIN S937.51.171, High Speed Rail Empire Corridor Project
Tier 1 Environmental Impact Statement
New York City to Buffalo/Niagara Falls

Ladies and Gentlemen:

The New York State Department of Transportation (NYSDOT), in cooperation with the Federal Railroad Administration (FRA), is initiating development of a Tier 1 Service Level Environmental Impact Statement (EIS) of proposed improvements to intercity passenger rail service along the Empire Corridor between New York City, New York and Niagara Falls, New York. The 463-mile Empire Corridor begins at Moynihan/Pennsylvania (Penn) Station in New York City (New York County), proceeds north to Yonkers and Croton-Harmon (Westchester County), Poughkeepsie (Dutchess County) and Albany-Rensselaer (Albany County), then turns west to Schenectady (Schenectady County), Utica (Oneida County), Syracuse (Onondaga County), Rochester (Monroe County), Buffalo (Erie County), and terminates at Niagara Falls (Niagara County).

Environmental Review Process: The Environmental Impact Statement (EIS) will be developed in accordance with the National Environmental Policy Act of 1969 (NEPA), the environmental review provisions of Section 6002 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), and the New York State Environmental Quality Review Act (SEQR). The FRA and the NYSDOT will use a tiered process, as provided for in 40 CFR 1508.28, in the completion of the environmental review of the project. "Tiering" is a staged environmental review process applied to environmental reviews for complex projects. The initial phase ("Tier 1 EIS") of this process will address

broad service-level issues and proposals. Subsequent phases or tiers will analyze, at a greater level of detail, narrower site-specific proposals based on the decisions made in Tier 1.

Scope of Agency Involvement: Issues that will be analyzed at the service level in this Tier 1 EIS include ways to introduce travel speeds of at least 110 mph in places along the Empire Corridor where those speeds are not possible, and to improve the reliability, travel times and frequency of passenger train service in order to attract additional passengers and be more competitive with other intercity transportation modes. The project will establish specific goals for train frequency, trip time, and on-time performance and identify operational changes and investments in infrastructure and equipment necessary to achieve those goals. The EIS will address the project's potential effects on noise, air, water quality, and cultural and recreational resources, as well as other social, economic and environmental effects. A result of the Tier 1 EIS will be identification of further analysis required in Tier 2 NEPA document(s) for specific improvement projects.

As part of the process for determining the scope of issues to be addressed in the Tier 1 Draft Environmental Impact Statement and for identifying the important issues related to the proposed action, we request your comments on the above issues and any other issues that you can identify as important. We intend to use your comments to:

- Identify the range of alternatives and impacts and important issues to be addressed in the Environmental Impact Statement.
- Identify and eliminate from detailed study the issues which are not important or which have been covered by prior environmental review.
- Identify other environmental review and consultation requirements.

Since the project may require a permit or approval from your agency, we request your agency to be a cooperating agency.

We expect your agency's involvement to entail only those areas under its jurisdiction or expertise and no direct writing or analysis will be necessary for the document's preparation. The activities we will take to maximize interagency cooperation may include the following:

1. Invite you to participate in scoping meetings and other meetings;
2. Consult with you on any relevant technical studies that will be required for the project;
3. Organize joint field reviews with you;
4. Provide you with project information, including study results;
5. Request your review of relevant sections of the DEIS prior to its release for comment by the public and other agencies.
6. Encourage your agency to use the above documents to express your views on subjects within your jurisdiction or expertise; and
7. Include information in the project environmental documents that cooperating agencies need to discharge their NEPA responsibilities and any other requirements regarding jurisdictional approvals, permits, licenses, and/or clearances.

You have the right to expect that the EIS will enable you to discharge your jurisdictional responsibilities. Likewise you have the obligation to tell us if, at any point in the process, your needs are not being met. We expect that at the end of the process, the EIS and our public involvement process will satisfy your NEPA requirements, as applicable, including those related to project alternatives, environmental consequences and mitigation. Further, we intend to utilize the EIS and FRA's subsequent record of decision as our decision-making documents and as the basis for the permit application.

Public Involvement: Scoping meetings will be held from **5:30 to 7:30 pm** in Buffalo, Rochester, Syracuse, Utica, Albany, and New York City, in late October and early November. We encourage you to attend. A Scoping Information Package will be available in the days ahead.

A public hearing will be held after publication of the Tier 1 DEIS to obtain comments on that document. Public notice will be given prior to the hearing regarding its time and location and process for submitting comments.

We look forward to your comments and response to this request and your participation as a cooperating agency on this project. If you have any questions or would like to discuss in more detail the project or our agencies' respective roles and responsibilities during the preparation of this EIS, please contact David Chan or the Project team via empirecorridor@dot.state.ny.us. Please forward any initial comments and confirmation that you will be or will not be a cooperating agency to us by October 15, 2010. E-mail replies should be sent to David Chan at NYSDOT at empirecorridor@dot.state.ny.us.

Sincerely,

A handwritten signature in cursive script, reading "Marie Corrado".

Marie Corrado
Director of Major Projects



STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION
ALBANY, N.Y. 12232
www.nysdot.gov

STANLEY GEE
ACTING COMMISSIONER

DAVID A. PATERSON
GOVERNOR

October 7, 2010

Lingard Knutson
US Environmental Protection Agency (EPA)
290 Broadway, 25th floor
New York, NY 10007

Re: PIN S937.51.171, High Speed Rail Empire Corridor Project
Tier 1 Environmental Impact Statement
New York City to Buffalo/Niagara Falls

Ladies and Gentlemen:

The New York State Department of Transportation (NYSDOT), in cooperation with the Federal Railroad Administration (FRA), is initiating development of a Tier 1 Service Level Environmental Impact Statement (EIS) of proposed improvements to intercity passenger rail service along the Empire Corridor between New York City, New York and Niagara Falls, New York. The 463-mile Empire Corridor begins at Moynihan/Pennsylvania (Penn) Station in New York City (New York County), proceeds north to Yonkers and Croton-Harmon (Westchester County), Poughkeepsie (Dutchess County) and Albany-Rensselaer (Albany County), then turns west to Schenectady (Schenectady County), Utica (Oneida County), Syracuse (Onondaga County), Rochester (Monroe County), Buffalo (Erie County), and terminates at Niagara Falls (Niagara County).

Environmental Review Process: The Environmental Impact Statement (EIS) will be developed in accordance with the National Environmental Policy Act of 1969 (NEPA), the environmental review provisions of Section 6002 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), and the New York State Environmental Quality Review Act (SEQR). The FRA and the NYSDOT will use a tiered process, as provided for in 40 CFR 1508.28, in the completion of the environmental review of the project. "Tiering" is a staged environmental review process applied to environmental reviews for complex projects. The initial phase ("Tier 1 EIS") of this process will address

broad service-level issues and proposals. Subsequent phases or tiers will analyze, at a greater level of detail, narrower site-specific proposals based on the decisions made in Tier 1.

Scope of Agency Involvement: Issues that will be analyzed at the service level in this Tier 1 EIS include ways to introduce travel speeds of at least 110 mph in places along the Empire Corridor where those speeds are not possible, and to improve the reliability, travel times and frequency of passenger train service in order to attract additional passengers and be more competitive with other intercity transportation modes. The project will establish specific goals for train frequency, trip time, and on-time performance and identify operational changes and investments in infrastructure and equipment necessary to achieve those goals. The EIS will address the project's potential effects on noise, air, water quality, and cultural and recreational resources, as well as other social, economic and environmental effects. A result of the Tier 1 EIS will be identification of further analysis required in Tier 2 NEPA document(s) for specific improvement projects.

As part of the process for determining the scope of issues to be addressed in the Tier 1 Draft Environmental Impact Statement and for identifying the important issues related to the proposed action, we request your comments on the above issues and any other issues that you can identify as important. We intend to use your comments to:

- Identify the range of alternatives and impacts and important issues to be addressed in the Environmental Impact Statement.
- Identify and eliminate from detailed study the issues which are not important or which have been covered by prior environmental review.
- Identify other environmental review and consultation requirements.

Since the project may require a permit or approval from your agency, we request your agency confirm your prior decision to be a cooperating agency.

We expect your agency's involvement to entail only those areas under its jurisdiction or expertise and no direct writing or analysis will be necessary for the document's preparation. The activities we will take to maximize interagency cooperation may include the following:

1. Invite you to participate in scoping meetings and other meetings;
2. Consult with you on any relevant technical studies that will be required for the project;
3. Organize joint field reviews with you;
4. Provide you with project information, including study results;
5. Request your review of relevant sections of the DEIS prior to its release for comment by the public and other agencies.
6. Encourage your agency to use the above documents to express your views on subjects within your jurisdiction or expertise; and
7. Include information in the project environmental documents that cooperating agencies need to discharge their NEPA responsibilities and any other requirements regarding jurisdictional approvals, permits, licenses, and/or clearances.

You have the right to expect that the EIS will enable you to discharge your jurisdictional responsibilities. Likewise you have the obligation to tell us if, at any point in the process, your needs are not being met. We expect that at the end of the process, the EIS and our public involvement process will satisfy your NEPA requirements, as applicable, including those related to project alternatives, environmental consequences and mitigation. Further, we intend to utilize the EIS and FRA's subsequent record of decision as our decision-making documents and as the basis for the permit application.

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Sincerely,

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Marie Corrado
Director of Major Projects



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STANLEY GEE
ACTING COMMISSIONER

DAVID A. PATERSON
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October 7, 2010

Ms. Brigid Hynes-Cherin
Federal Transit Administration (FTA)
One Bowling Green, Room 429
New York, NY 10004

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Sincerely,

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Marie Corrado
Director of Major Projects



STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION
ALBANY, N.Y. 12232
www.nysdot.gov

STANLEY GEE
ACTING COMMISSIONER

DAVID A. PATERSON
GOVERNOR

October 7, 2010

Mr. Leonard Houston
US Army Corps of Engineers (USACE)
26 Federal Plaza, Room 2109
New York, NY 10278

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New York City to Buffalo/Niagara Falls

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Sincerely,

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Marie Corrado
Director of Major Projects



STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION
ALBANY, N.Y. 12232
www.nysdot.gov

STANLEY GEE
ACTING COMMISSIONER

DAVID A. PATERSON
GOVERNOR

October 7, 2010

Ms. Anne Reynolds
NYS Department of Environmental Conservation (NYSDEC)
625 Broadway
Albany, NY 12233

Re: PIN S937.51.171, High Speed Rail Empire Corridor Project
Tier 1 Environmental Impact Statement
New York City to Buffalo/Niagara Falls

Ladies and Gentlemen:

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STANLEY GEE
ACTING COMMISSIONER

DAVID A. PATERSON
GOVERNOR

October 7, 2010

Mr. Kevin Millington
NYS Department of State (NYSDOS)
41 State Street
Attn: Coastal Management Program
Albany, NY 12231

Re: PIN S937.51.171, High Speed Rail Empire Corridor Project
Tier 1 Environmental Impact Statement
New York City to Buffalo/Niagara Falls

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STANLEY GEE
ACTING COMMISSIONER

DAVID A. PATERSON
GOVERNOR

October 7, 2010

Ms. Anne Secord
US Fish & Wildlife Service (FWS)
3817 Luker Rd.
Cortland, NY 13045

Re: PIN S937.51.171, High Speed Rail Empire Corridor Project
Tier 1 Environmental Impact Statement
New York City to Buffalo/Niagara Falls

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STANLEY GEE
ACTING COMMISSIONER

DAVID A. PATERSON
GOVERNOR

October 7, 2010

Mr. Ronald Anzalone
Advisory Council on Historic Preservation (ACHP)
Old Post Office Building
1100 Pennsylvania Ave, N.W. Suite 809
Washington DC, 20004

Re: PIN S937.51.171, High Speed Rail Empire Corridor Project
Tier 1 Environmental Impact Statement
New York City to Buffalo/Niagara Falls

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STANLEY GEE
ACTING COMMISSIONER

DAVID A. PATERSON
GOVERNOR

October 7, 2010

Mr. William Hollister
Amtrak (National Railroad Passenger Corporation)
Amtrak General Offices, 525 East Street
Rensselaer, NY 12144

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New York City to Buffalo/Niagara Falls

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Marie Corrado
Director of Major Projects



STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION
ALBANY, N.Y. 12232
www.nysdot.gov

STANLEY GEE
ACTING COMMISSIONER

DAVID A. PATERSON
GOVERNOR

October 7, 2010

Mr. Peter Colosi
National Marine Fisheries Service (NMFS)
55 Great Republic Drive
Gloucester, MA 01930-2298

Re: PIN S937.51.171, High Speed Rail Empire Corridor Project
Tier 1 Environmental Impact Statement
New York City to Buffalo/Niagara Falls

Ladies and Gentlemen:

The New York State Department of Transportation (NYSDOT), in cooperation with the Federal Railroad Administration (FRA), is initiating development of a Tier 1 Service Level Environmental Impact Statement (EIS) of proposed improvements to intercity passenger rail service along the Empire Corridor between New York City, New York and Niagara Falls, New York. The 463-mile Empire Corridor begins at Moynihan/Pennsylvania (Penn) Station in New York City (New York County), proceeds north to Yonkers and Croton-Harmon (Westchester County), Poughkeepsie (Dutchess County) and Albany-Rensselaer (Albany County), then turns west to Schenectady (Schenectady County), Utica (Oneida County), Syracuse (Onondaga County), Rochester (Monroe County), Buffalo (Erie County), and terminates at Niagara Falls (Niagara County).

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STANLEY GEE
ACTING COMMISSIONER

DAVID A. PATERSON
GOVERNOR

October 7, 2010

Mr. Andy Beers
NYS Office of Parks, Recreation & Historic Preservation
Agency Building 1
Albany, NY 12238

Re: PIN S937.51.171, High Speed Rail Empire Corridor Project
Tier 1 Environmental Impact Statement
New York City to Buffalo/Niagara Falls

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STANLEY GEE
ACTING COMMISSIONER

DAVID A. PATERSON
GOVERNOR

October 7, 2010

Mr. Gary Kassof
US Coast Guard
Battery Park Building
1 South St.
New York, NY 10004-5073

Re: PIN S937.51.171, High Speed Rail Empire Corridor Project
Tier 1 Environmental Impact Statement
New York City to Buffalo/Niagara Falls

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DEPARTMENT OF TRANSPORTATION
ALBANY, N.Y. 12232
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STANLEY GEE
ACTING COMMISSIONER

DAVID A. PATERSON
GOVERNOR

October 12, 2010

Mr. Dennis Reidenbach, Northeast Regional Director
National Park Service
U.S. Custom House
200 Chestnut Street, 5th Floor
Philadelphia, PA 19106

Re: PIN S937.51.171, High Speed Rail Empire Corridor Project
Tier 1 Environmental Impact Statement
New York City to Buffalo/Niagara Falls

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STANLEY GEE
ACTING COMMISSIONER

DAVID A. PATERSON
GOVERNOR

October 12, 2010

Ms. Ruth Pierpont, Director
New York State Historic Preservation Office
Peeples Island, P.O. Box 189
Waterford, NY 12188

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New York State Department of Environmental Conservation
Division of Environmental Permits
625 Broadway, 4th Floor
Albany, NY 12233

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New York City to Buffalo/Niagara Falls

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The New York State Department of Transportation (NYSDOT), in cooperation with the Federal Railroad Administration (FRA), is initiating development of a Tier 1 Service Level Environmental Impact Statement (EIS) of proposed improvements to intercity passenger rail service along the Empire Corridor between New York City, New York and Niagara Falls, New York. The 463-mile Empire Corridor begins at Moynihan/Pennsylvania (Penn) Station in New York City (New York County), proceeds north to Yonkers and Croton-Harmon (Westchester County), Poughkeepsie (Dutchess County) and Albany-Rensselaer (Albany County), then turns west to Schenectady (Schenectady County), Utica (Oneida County), Syracuse (Onondaga County), Rochester (Monroe County), Buffalo (Erie County), and terminates at Niagara Falls (Niagara County).

Environmental Review Process: The Environmental Impact Statement (EIS) will be developed in accordance with the National Environmental Policy Act of 1969 (NEPA), the environmental review provisions of Section 6002 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), and the New York State Environmental Quality Review Act (SEQR). The FRA and the NYSDOT will use a tiered process, as provided for in 40 CFR 1508.28, in the completion of the environmental review of the project. "Tiering" is a staged environmental review process applied to environmental reviews for complex projects. The initial phase ("Tier 1 EIS") of this process will address

broad service-level issues and proposals. Subsequent phases or tiers will analyze, at a greater level of detail, narrower site-specific proposals based on the decisions made in Tier 1.

Scope of Agency Involvement: Issues that will be analyzed at the service level in this Tier 1 EIS include ways to introduce travel speeds of at least 110 mph in places along the Empire Corridor where those speeds are not possible, and to improve the reliability, travel times and frequency of passenger train service in order to attract additional passengers and be more competitive with other intercity transportation modes. The project will establish specific goals for train frequency, trip time, and on-time performance and identify operational changes and investments in infrastructure and equipment necessary to achieve those goals. The EIS will address the project's potential effects on noise, air, water quality, and cultural and recreational resources, as well as other social, economic and environmental effects. A result of the Tier 1 EIS will be identification of further analysis required in Tier 2 NEPA document(s) for specific improvement projects.

As part of the process for determining the scope of issues to be addressed in the Tier 1 Draft Environmental Impact Statement and for identifying the important issues related to the proposed action, we request your comments on the above issues and any other issues that you can identify as important. We intend to use your comments to:

- Identify the range of alternatives and impacts and important issues to be addressed in the Environmental Impact Statement.
- Identify and eliminate from detailed study the issues which are not important or which have been covered by prior environmental review.
- Identify other environmental review and consultation requirements.

Since the project may require a permit or approval from your agency, we request your agency to be a cooperating agency.

We expect your agency's involvement to entail only those areas under its jurisdiction or expertise and no direct writing or analysis will be necessary for the document's preparation. The activities we will take to maximize interagency cooperation may include the following:

1. Invite you to participate in scoping meetings and other meetings;
2. Consult with you on any relevant technical studies that will be required for the project;
3. Organize joint field reviews with you;
4. Provide you with project information, including study results;
5. Request your review of relevant sections of the DEIS prior to its release for comment by the public and other agencies.
6. Encourage your agency to use the above documents to express your views on subjects within your jurisdiction or expertise; and
7. Include information in the project environmental documents that cooperating agencies need to discharge their NEPA responsibilities and any other requirements regarding jurisdictional approvals, permits, licenses, and/or clearances.

You have the right to expect that the EIS will enable you to discharge your jurisdictional responsibilities. Likewise you have the obligation to tell us if, at any point in the process, your needs are not being met. We expect that at the end of the process, the EIS and our public involvement process will satisfy your NEPA requirements, as applicable, including those related to project alternatives, environmental consequences and mitigation. Further, we intend to utilize the EIS and FRA's subsequent record of decision as our decision-making documents and as the basis for the permit application.

Public Involvement: Scoping meetings will be held from **5:30 to 7:30 pm** in Buffalo, Rochester, Syracuse, Utica, Albany, and New York City, in late October and early November. We encourage you to attend. A Scoping Information Package will be available in the days ahead.

A public hearing will be held after publication of the Tier 1 DEIS to obtain comments on that document. Public notice will be given prior to the hearing regarding its time and location and process for submitting comments.

We look forward to your comments and response to this request and your participation as a cooperating agency on this project. If you have any questions or would like to discuss in more detail the project or our agencies' respective roles and responsibilities during the preparation of this EIS, please contact David Chan or the Project team via empirecorridor@dot.state.ny.us. Please forward any initial comments and confirmation that you will be or will not be a cooperating agency to us by October 15, 2010. E-mail replies should be sent to David Chan at NYSDOT at empirecorridor@dot.state.ny.us.

Sincerely,

A handwritten signature in cursive script that reads "Marie Corrado".

Marie Corrado
Director of Major Projects

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1.2 Cooperating Agency Responses

Index of Cooperating Agency Responses

Musumeci, Grace, Chief, Environmental Review Section, Strategic Planning and Multi-Media Programs Branch, U.S. Environmental Protection Agency, “High Speed Rail Empire Corridor Project Tier 1 EIS New York City to Buffalo/Niagara Falls - PIN S937.51.171,” Letter to David Chan, New York State Department of Transportation, October 14, 2010.

Kassof, Gary, Bridge Program Manager, First Coast Guard District, Letter to Marie Corrado, New York State Department of Transportation, November 5, 2010.

Alworth, Tom, Deputy Commissioner for Natural Resources, New York State Office of Parks, Recreation and Historic Preservation, “High Speed Rail Empire Corridor - response needed,” Email communication to Lindsay Zefting, HNTB Corporation, February 15, 2011.

Vaughn, Charlene, Advisory Council on Historic Preservation, “RE: Declined: FW: EPAC Meeting #1 (Materials and Information),” Email communication to Lindsay Zefting, HNTB Corporation, February 15, 2011.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

OCT 14 2010

Mr. David Chan
High Speed Rail Project Manager
New York State Department of Transportation
50 Wolf Road
Albany, NY 12232

**Re: High Speed Rail Empire Corridor Project Tier 1 EIS New York City to
Buffalo/Niagara Falls – PIN S937.51.171**

Dear Mr. Chan:

This is in response to your October 7, 2010 letter requesting that the Environmental Protection Agency (EPA) serve as a cooperating agency for the High Speed Rail Empire Corridor Project Tier 1 Environmental Impact Statement. EPA is pleased to accept the New York State Department of Transportation's (NYSDOT) offer. As such, we will continue to participate in the scoping process, assist with the development of information and analyses concerning EPA areas of expertise, and contribute staff time as appropriate, all to the level practicable. If NYSDOT has particular analyses or support in mind at this time, EPA would appreciate being made aware of those as soon as possible so we can make every effort to align our resources accordingly.

We would like to remind you that our participation does not preclude our review under the National Environmental Policy Act and comment authority under Section 309 of the Clean Air Act. Lingard Knutson will remain the contact person for this project. Her phone number is (212) 637-3747.

Sincerely yours,

A handwritten signature in cursive script, reading "Grace Musumeci", is written over a horizontal line.

Grace Musumeci, Chief
Environmental Review Section

cc: T. Gibson, USDOT



16591

November 5, 2010

Ms. Marie Corrado
Director of Major Projects
New York State Department of Transportation
50 Wolf Road
Albany, NY 12232

Dear Ms. Corrado:

This responds to your letters of 07 October 2010 concerning Project I.D. No. S937.51.171, High Speed Rail Empire Corridor Project.

The Coast Guard will agree to be a cooperating agency under the terms related in your Tier 1 Environmental Impact Statement letter. We expect that all navigational and other concerns will be addressed under appropriate sections of the environmental impact statement.

I had the pleasure of meeting with David Chan and Benjamin Martin from NYSDOT at the October 27, 2010 Public Meeting held in New York City. I discussed with them our interests in this project in regards to impacts to navigation due to construction of new bridges or modifications to existing bridges over navigable waters of the United States. As segments of this proposed project may fall under Coast Guard regulatory jurisdiction, we must decline your invitation to be a member of the Empire Project Advisory Committee (EPAC). However, we remain available to provide navigational related information as necessary.

Chris Bisignano of this office has been assigned as project manager and may be contacted at (212) 668-7994 for specifics regarding Coast Guard Bridge permitting requirements.

Sincerely,

A handwritten signature in black ink, appearing to read "Gary Kassof".

Gary Kassof
Bridge Program Manager
First Coast Guard District
By direction of the District Commander

Ben Fischer

From: Lindsay Zefting
Sent: Tuesday, February 22, 2011 4:20 PM
To: Ben Fischer
Subject: FW: High Speed Rail Empire Corridor - response needed

From: Alworth, Tom (ALB) [\[mailto:Tom.Alworth@oprhp.state.ny.us\]](mailto:Tom.Alworth@oprhp.state.ny.us)
Sent: Tuesday, February 15, 2011 12:41 PM
To: Lindsay Zefting
Cc: Lyons, Thomas (ALB); Croll, Christina (ALB)
Subject: RE: High Speed Rail Empire Corridor - response needed

Yes Lindsay – Please list us as a cooperating Agency... the Hi speed tracks will likely pass very near to several state parks.

Tom Alworth
Deputy Commissioner for Natural Resources
NYS Office of Parks, Recreation and Historic Preservation

From: Lindsay Zefting [\[mailto:lzefting@HNTB.com\]](mailto:lzefting@HNTB.com)
Sent: Tuesday, February 15, 2011 9:19 AM
To: Alworth, Tom (ALB)
Cc: Ben Fischer
Subject: High Speed Rail Empire Corridor - response needed

Tom,
We're preparing for our second EPAC meeting and updating our contact lists. Can you confirm whether or not NYSOPRHP will be involved in the EPAC and would like to be a cooperating agency?
Thank you,
-Lindsay

Lindsay Zefting, EIT
Engineer I/Project Administrator

HNTB Corporation
1762 Central Avenue
Suite 301
Albany, New York 12205

Tel (518)218.5555
Fax(518)218.5556
www.hntb.com

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delivering the e-mail to the intended recipient,
be advised that you have received this e-mail in error and that any use,
dissemination, forwarding, printing or copying this e-mail is strictly
prohibited.

Ben Fischer

From: Charlene Vaughn [cvaughn@achp.gov]
Sent: Tuesday, February 15, 2011 9:22 AM
To: Lindsay Zefting
Cc: Reid Nelson; Ben Fischer; Louise Brodnitz
Subject: RE: Declined: FW: EPAC Meeting #1 (Materials & Information)

Lindsay,

I don't think that there is a need for us to participate at this time. Thanks, and please keep us posted.

Charlene

From: Lindsay Zefting [<mailto:lzefting@HNTB.com>]
Sent: Tuesday, February 15, 2011 9:13 AM
To: Charlene Vaughn
Cc: Reid Nelson; Ben Fischer
Subject: RE: Declined: FW: EPAC Meeting #1 (Materials & Information)

Charlene,

We had sent ACHP an invitation for both the EPAC and to be a cooperating agency for the High Speed Rail Empire Corridor Project. Your response to the EPAC invitation is below. We're preparing for our second EPAC meeting and updating our lists.

Can you please confirm that ACHP does not wish to participate in the EPAC and whether or not ACHP will be a cooperating agency?

Thank you,
Lindsay

Lindsay Zefting, EIT
Engineer I/Project Administrator

HNTB Corporation
1762 Central Avenue
Suite 301
Albany, New York 12205

Tel (518)218.5555
Fax(518)218.5556
www.hntb.com

-----Original Appointment-----

From: Charlene Vaughn [<mailto:cvaughn@achp.gov>]
Sent: Friday, October 15, 2010 4:16 PM
To: Lindsay Zefting
Subject: Declined: FW: EPAC Meeting #1 (Materials & Information)
When: Monday, October 18, 2010 1:00 PM-4:00 PM (GMT-05:00) Eastern Time (US & Canada).
Where: Web Conference & CDTC (1 Park Place, 12205)

No. We probably can't commit the time or resources.

This e-mail and any files transmitted with it are confidential and are intended solely for the use of the individual or entity to whom they are addressed.

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2. Participating Agencies Correspondence

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2.1 Participating Agency Invitation Letters

Index of Participating Agency Invitation Letters

Corrado, Marie, Director of Major Projects, State of New York Department of Transportation, “PIN S937.51.171, High Speed Rail Empire Corridor Project, Tier 1 Environmental Impact Statement, New York City to Buffalo/Niagara Falls,” Letter, October 7, 2010, to the following:

Mr. Joel Ettinger
New York Metropolitan Transportation Council (MTC)
199 Water Street, 22nd Floor
New York, NY 10038

Mr. Mark Debald
Poughkeepsie – Dutchess County Transportation Council (PDCTC)
27 High Street, 2nd Floor
Poughkeepsie, NY 12601

Mr. Dennis Doyle
Ulster County Transportation Council (UCTC)
244 Fair Street P.O. Box 1800
Kingston, NY 12402

Mr. John Czamanske
Orange County Transportation Council
124 Main Street
Goshen, NY 10924

Mr. Christopher O'Neill
Capital District Transportation Committee (CDTC)
One Park Place
Albany, NY 12205

Mr. Harry Miller
Herkimer-Oneida Counties Transportation Study
Boehlert Center at Union Station
321 Main Street
Utica, NY 13501

Mr. James D'Agostino
Syracuse Metropolitan Transportation Council
100 Clinton Square
126 N. Salina Street, Suite 100
Syracuse, NY 13202

Mr. Richard Perrin
Genesee Transportation Council (GTC)
50 West Main Street
Suite 8112
Rochester, NY 14614

Mr. Hal Morse
Greater Buffalo – Niagara Regional Transportation Council (GBNRTC)
438 Main Street
Buffalo, NY 14202

Mr. Matthew Behnke
Federal Emergency Management Agency
FEMA Headquarters
500c Street SW, Suite 713
Washington DC 20472

Mr. Frank Kobliski
Central New York Regional Transportation Authority
(CENTRO)
P.O. Box 820
Syracuse, NY 13205-0820

Mr. William Wheeler
Metropolitan Transit Authority (MTA)
347 Madison Ave
New York, NY 10017

Mr. Lawrence Meckler
Niagara Frontier Transportation Authority (NFTA)
181 Ellicott Street
Buffalo, NY 14203

Mr. Mark Aesch
Rochester Genesee Regional Transportation Authority (RGRTA)
1372 East Main Street
Rochester, NY 14609

Corrado, Marie, Director of Major Projects, State of New York Department of Transportation, “PIN S937.51.171, High Speed Rail Empire Corridor Project, Tier 1 Environmental Impact Statement, New York City to Buffalo/Niagara Falls,” Letter, October 12, 2010, to the following:

Mr. Carm Basile, Executive Director
Capital District Transportation Authority
110 Watervliet Avenue
Albany, NY 12206

Mr. Brian Sterman, Deputy Director for Long Range Planning

Metro-North Railroad
347 Madison Avenue
New York, NY 10017

Ms. Carmella Mantello, Director
New York State Canal Corporation
200 Southern Boulevard, P.O. Box 189
Albany, NY 12201-0189

Mr. Kenneth Swanekamp, Director of Business Assistance
Erie County Department of Environment and Planning
County Office of Economic Development
Edward A. Rath County Office Building
95 Franklin Street, 10th Floor
Buffalo, NY 14202

Mr. Robert R. Kulikowski, Ph.D., Director
New York City Mayor's Office of Environmental Coordination
253 Broadway, 14th Floor
New York, NY 10007

Mr. Paul V. Rush, Deputy Commissioner
New York City Department of Environmental Protection
Bureau of Water Supply
P.O. Box 358
Grahamsville, NY 12740

Mr. Gary Heath, Director of Environmental Analysis
New York City Department of Environmental Protection
Bureau of Environmental Planning and Analysis
59-17 Junction Boulevard, 4th Floor
Flushing, NY 11373

Mr. Ray Hodge
New York City Department of Environmental Protection
Bureau of Environmental Compliance
Records Control
59-17 Junction Boulevard, 9th Floor
Corona, NY 11368

Mr. Daniel Grulich, Interagency Coordinator
New York City Department of Parks & Recreation
Olmsted Center, Room 24D
Flushing Meadows-Corona Park
Flushing, NY 11368

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STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION
ALBANY, N.Y. 12232
www.nysdot.gov

STANLEY GEE
ACTING COMMISSIONER

DAVID A. PATERSON
GOVERNOR

October 7, 2010

Mr. Joel Ettinger
New York Metropolitan Transportation Council (MTC)
199 Water Street, 22nd Floor
New York, NY 10038

Re: PIN S937.51.171, High Speed Rail Empire Corridor Project
Tier 1 Environmental Impact Statement
New York City to Buffalo/Niagara Falls

Ladies and Gentlemen:

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Scope of Agency Involvement: Issues that will be analyzed at the service level in this Tier 1 EIS include ways to introduce travel speeds of at least 110 mph in places along the Empire Corridor where those speeds are not possible, and to improve the reliability, travel times and frequency of passenger train service in order to attract additional passengers and be more competitive with other intercity

transportation modes. The project will establish specific goals for train frequency, trip time, and on-time performance and identify operational changes and investments in infrastructure and equipment necessary to achieve those goals. The EIS will address the project's potential effects on noise, air, water quality, and cultural and recreational resources, as well as other social, economic and environmental effects. A result of the Tier 1 EIS will be identification of further analysis required in Tier 2 NEPA document(s) for specific improvement projects.

As part of the process for determining the scope of issues to be addressed in the Tier 1 Draft Environmental Impact Statement and for identifying the important issues related to the proposed action, we request your comments on the above issues and any other issues that you can identify as important. We intend to use your comments to:

- Identify the range of alternatives and impacts and important issues to be addressed in the Environmental Impact Statement.
- Identify and eliminate from detailed study the issues which are not important or which have been covered by prior environmental review.
- Identify other environmental review and consultation requirements.

Since the project might impact resources your agency is involved with, we request your agency to be a participating agency. Pursuant to Section 6002 of SAFETEA-LU, participating agencies are responsible to identify, as early as practicable, any issues of concern regarding the project's potential impacts.

We expect your agency's involvement to entail only those areas under its jurisdiction or expertise and no direct writing or analysis will be necessary for the document's preparation. The activities we will take to maximize interagency cooperation may include the following:

1. Invite you to participate in scoping meetings and other meetings;
2. Consult with you on any relevant technical studies that will be required for the project;
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We look forward to your comments and response to this request and your role as a participating agency on this project. If you have any questions or would like to discuss in more detail the project or our agencies' respective roles and responsibilities during the preparation of this EIS, please contact David Chan or the Project team via empirecorridor@dot.state.ny.us. Please forward any initial comments and confirmation that you will be a participating agency to us by October 15, 2010. E-mail replies should be sent to David Chan at NYSDOT at empirecorridor@dot.state.ny.us.

Sincerely,



Marie Corrado
Director of Major Projects



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ACTING COMMISSIONER

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October 7, 2010

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Poughkeepsie – Dutchess County Transportation Council (PDCTC)
27 High Street, 2nd Floor
Poughkeepsie, NY 12601

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October 7, 2010

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Ulster County Transportation Council (UCTC)
244 Fair Street P.O. Box 1800
Kingston, NY 12402

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Marie Corrado
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STANLEY GEE
ACTING COMMISSIONER

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GOVERNOR

October 7, 2010

Mr. John Czamanske
Orange County Transportation Council
124 Main Street
Goshen, NY 10924

Re: PIN S937.51.171, High Speed Rail Empire Corridor Project
Tier 1 Environmental Impact Statement
New York City to Buffalo/Niagara Falls

Ladies and Gentlemen:

The New York State Department of Transportation (NYSDOT), in cooperation with the Federal Railroad Administration (FRA), is initiating development of a Tier 1 Service Level Environmental Impact Statement (EIS) of proposed improvements to intercity passenger rail service along the Empire Corridor between New York City, New York and Niagara Falls, New York. The 463-mile Empire Corridor begins at Moynihan/Pennsylvania (Penn) Station in New York City (New York County), proceeds north to Yonkers and Croton-Harmon (Westchester County), Poughkeepsie (Dutchess County) and Albany-Rensselaer (Albany County), then turns west to Schenectady (Schenectady County), Utica (Oneida County), Syracuse (Onondaga County), Rochester (Monroe County), Buffalo (Erie County), and terminates at Niagara Falls (Niagara County).

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Scope of Agency Involvement: Issues that will be analyzed at the service level in this Tier 1 EIS include ways to introduce travel speeds of at least 110 mph in places along the Empire Corridor where those speeds are not possible, and to improve the reliability, travel times and frequency of passenger train service in order to attract additional passengers and be more competitive with other intercity

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As part of the process for determining the scope of issues to be addressed in the Tier 1 Draft Environmental Impact Statement and for identifying the important issues related to the proposed action, we request your comments on the above issues and any other issues that you can identify as important. We intend to use your comments to:

- Identify the range of alternatives and impacts and important issues to be addressed in the Environmental Impact Statement.
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Sincerely,



Marie Corrado
Director of Major Projects



STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION
ALBANY, N.Y. 12232
www.nysdot.gov

STANLEY GEE
ACTING COMMISSIONER

DAVID A. PATERSON
GOVERNOR

October 7, 2010

Mr. Christopher O'Neill
Capital District Transportation Committee (CDTC)
One Park Place
Albany, NY 12205

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ACTING COMMISSIONER

DAVID A. PATERSON
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October 7, 2010

Mr. Harry Miller
Herkimer-Oneida Counties Transportation Study
Boehlert Center at Union Station
321 Main Street
Utica, NY 13501

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STANLEY GEE
ACTING COMMISSIONER

DAVID A. PATERSON
GOVERNOR

October 7, 2010

Mr. James D'Agostino
Syracuse Metropolitan Transportation Council
100 Clinton Square
126 N. Salina Street, Suite 100
Syracuse, NY 13202

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October 7, 2010

Mr. Richard Perrin
Genesee Transportation Council (GTC)
50 West Main Street
Suite 8112
Rochester, NY 14614

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October 7, 2010

Mr. Hal Morse
Greater Buffalo – Niagara Regional Transportation Council (GBNRTC)
438 Main Street
Buffalo, NY 14202

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October 7, 2010

Mr. Matthew Behnke
Federal Emergency Management Agency
FEMA Headquarters
500c Street SW, Suite 713
Washington DC 20472

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Marie Corrado
Director of Major Projects



STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION
ALBANY, N.Y. 12232
www.nysdot.gov

STANLEY GEE
ACTING COMMISSIONER

DAVID A. PATERSON
GOVERNOR

October 7, 2010

Mr. Frank Kobliski
Central New York Regional Transportation Authority (CENTRO)
P.O. Box 820
Syracuse, NY 13205-0820

Re: PIN S937.51.171, High Speed Rail Empire Corridor Project
Tier 1 Environmental Impact Statement
New York City to Buffalo/Niagara Falls

Ladies and Gentlemen:

The New York State Department of Transportation (NYSDOT), in cooperation with the Federal Railroad Administration (FRA), is initiating development of a Tier 1 Service Level Environmental Impact Statement (EIS) of proposed improvements to intercity passenger rail service along the Empire Corridor between New York City, New York and Niagara Falls, New York. The 463-mile Empire Corridor begins at Moynihan/Pennsylvania (Penn) Station in New York City (New York County), proceeds north to Yonkers and Croton-Harmon (Westchester County), Poughkeepsie (Dutchess County) and Albany-Rensselaer (Albany County), then turns west to Schenectady (Schenectady County), Utica (Oneida County), Syracuse (Onondaga County), Rochester (Monroe County), Buffalo (Erie County), and terminates at Niagara Falls (Niagara County).

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Scope of Agency Involvement: Issues that will be analyzed at the service level in this Tier 1 EIS include ways to introduce travel speeds of at least 110 mph in places along the Empire Corridor where those speeds are not possible, and to improve the reliability, travel times and frequency of passenger train

service in order to attract additional passengers and be more competitive with other intercity transportation modes. The project will establish specific goals for train frequency, trip time, and on-time performance and identify operational changes and investments in infrastructure and equipment necessary to achieve those goals. The EIS will address the project's potential effects on noise, air, water quality, and cultural and recreational resources, as well as other social, economic and environmental effects. A result of the Tier 1 EIS will be identification of further analysis required in Tier 2 NEPA document(s) for specific improvement projects.

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- Identify the range of alternatives and impacts and important issues to be addressed in the Environmental Impact Statement.
- Identify and eliminate from detailed study the issues which are not important or which have been covered by prior environmental review.
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DAVID A. PATERSON
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October 7, 2010

Mr. William Wheeler
Metropolitan Transit Authority (MTA)
347 Madison Ave
New York, NY 10017

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New York City to Buffalo/Niagara Falls

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GOVERNOR

October 7, 2010

Mr. Lawrence Meckler
Niagara Frontier Transportation Authority (NFTA)
181 Ellicott Street
Buffalo, NY 14203

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New York City to Buffalo/Niagara Falls

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STANLEY GEE
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DAVID A. PATERSON
GOVERNOR

October 7, 2010

Mr. Mark Aesch
Rochester Genesee Regional Transportation Authority (RGRTA)
1372 East Main Street
Rochester, NY 14609

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New York City to Buffalo/Niagara Falls

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DAVID A. PATERSON
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October 12, 2010

Mr. Carm Basile, Executive Director
Capital District Transportation Authority
110 Watervliet Avenue
Albany, NY 12206

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STANLEY GEE
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DAVID A. PATERSON
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October 12, 2010

Mr. Brian Stermann, Deputy Director for Long Range Planning
Metro-North Railroad
347 Madison Avenue
New York, NY 10017

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October 12, 2010

Ms. Carmella Mantello, Director
New York State Canal Corporation
200 Southern Boulevard, P.O. Box 189
Albany, NY 12201-0189

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Sincerely,



Marie Corrado
Director of Major Projects



STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION
ALBANY, N.Y. 12232
www.nysdot.gov

STANLEY GEE
ACTING COMMISSIONER

DAVID A. PATERSON
GOVERNOR

October 12, 2010

Mr. Kenneth Swanekamp, Director of Business Assistance
Erie County Department of Environment and Planning
County Office of Economic Development
Edward A. Rath County Office Building
95 Franklin Street, 10th Floor
Buffalo, NY 14202

Re: PIN S937.51.171, High Speed Rail Empire Corridor Project
Tier 1 Environmental Impact Statement
New York City to Buffalo/Niagara Falls

Ladies and Gentlemen:

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STANLEY GEE
ACTING COMMISSIONER

DAVID A. PATERSON
GOVERNOR

October 12, 2010

Mr. Robert R. Kulikowski, Ph.D., Director
New York City Mayor's Office of Environmental Coordination
253 Broadway, 14th Floor
New York, NY 10007

Re: PIN S937.51.171, High Speed Rail Empire Corridor Project
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STANLEY GEE
ACTING COMMISSIONER

DAVID A. PATERSON
GOVERNOR

October 12, 2010

Mr. Paul V. Rush, Deputy Commissioner
New York City Department of Environmental Protection
Bureau of Water Supply
P.O. Box 358
Grahamsville, NY 12740

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STANLEY GEE
ACTING COMMISSIONER

DAVID A. PATERSON
GOVERNOR

October 12, 2010

Mr. Gary Heath, Director of Environmental Analysis
New York City Department of Environmental Protection
Bureau of Environmental Planning and Analysis
59-17 Junction Boulevard, 4th Floor
Flushing, NY 11373

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STANLEY GEE
ACTING COMMISSIONER

DAVID A. PATERSON
GOVERNOR

October 12, 2010

Mr. Ray Hodge
New York City Department of Environmental Protection
Bureau of Environmental Compliance
Records Control
59-17 Junction Boulevard, 9th Floor
Corona, NY 11368

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DAVID A. PATERSON
GOVERNOR

October 12, 2010

Mr. Daniel Grulich, Interagency Coordinator
New York City Department of Parks & Recreation
Olmsted Center, Room 24D
Flushing Meadows-Corona Park
Flushing, NY 11368

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2.2 Participating Agency Responses

Index of Participating Agency Responses

Thorne, Jennifer, Capital District Transportation Authority, “High Speed Rail Empire Corridor Project: Invitation & Newsletter #1,” Email communication to Lindsay Zefting, HNTB Corporation, October 15, 2010.

O’Neill, Christopher R., Capital District Transportation Committee, “High Speed Rail Empire Corridor Project,” Email communication to David Chan, New York State Department of Transportation, October 12, 2010.

Swanekamp, Kenneth, Erie County Department of Environment & Planning, “High Speed Rail Project,” Email communication to David Chan, New York State Department of Transportation, October 15, 2010.

Perrin, Richard, Genesee Transportation Council, “GTC as Participating Agency on Empire Corridor High-Speed Rail EIS,” Email communication to David Chan, New York State Department of Transportation, October 15, 2010.

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Lindsay Zefting

From: Jennifer Thorne [JenniferT@CDTA.org]
Sent: Friday, October 15, 2010 9:04 AM
To: Lindsay Zefting; Carm Basile
Cc: Kristina Younger
Subject: RE: High Speed Rail Empire Corridor Project: Invitation & Newsletter #1

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Lindsay- Thank you for sending the invitation and newsletter. I will be attending the meeting on Monday, October 18th to represent CDTA as a participating agency throughout the EIS process. We have been working closely with NYSDOT on this and CDTA's Schenectady station project, and look forward to working on the advancement of high speed rail in the corridor.

Thank you,

Jennifer

From: Lindsay Zefting [<mailto:lzefting@HNTB.com>]
Sent: Thursday, October 14, 2010 4:37 PM
To: Carm Basile; Jennifer Thorne
Subject: High Speed Rail Empire Corridor Project: Invitation & Newsletter #1

Please find attached two separate invitation letters: 1) to join the High Speed Rail Empire Corridor Project Advisory Committee, and 2) to become a participating agency. The first EPAC meeting will be held on October 18th, 2010 and we hope to see you there.

To facilitate our first meeting on Monday, October 18th, attached is an advance copy of Newsletter 1. This four-page document provides you with an overview of the project, as well as the dates and locations of the upcoming Scoping Meetings. Six meetings will be held across New York State from October 19th to November 10th.

We look forward to working together on this important project.

Lindsay Zefting, EIT
Engineer I/Project Administrator

HNTB Corporation
1762 Central Avenue
Suite 301
Albany, New York 12205

Tel (518)218.5555
Fax(518)218.5556
www.hntb.com

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Lindsay Zefting

From: dot.sm.mo.empire.corridor [EmpireCorridor@dot.state.ny.us]
Sent: Wednesday, October 13, 2010 8:45 AM
To: Lindsay Zefting
Subject: FW: High Speed Rail Empire Corridor Project

From: Chris O'Neill [mailto:co'neill@cdtcmpo.org]
Sent: Tuesday, October 12, 2010 3:14 PM
To: dot.sm.mo.empire.corridor
Subject: High Speed Rail Empire Corridor Project

David,

CDTC would like to be a participating agency for the EIS for the High Speed Rail Empire Corridor Project. Thank you for inviting us.

Chris

Christopher R. O'Neill
Senior Transportation Planner II
Capital District Transportation Committee
One Park Place, Main Floor
Albany, New York 12205-2676
518-458-2161
CO'Neill@cdtcmpo.org

Lindsay Zefting

From: dot.sm.mo.empire.corridor [EmpireCorridor@dot.state.ny.us]
Sent: Friday, October 15, 2010 1:22 PM
To: Lindsay Zefting
Subject: FW: High Speed Rail Project

Follow Up Flag: Follow up
Flag Status: Flagged

From: Swanekamp, Kenneth [<mailto:Kenneth.Swanekamp@erie.gov>]
Sent: Friday, October 15, 2010 10:31 AM
To: dot.sm.mo.empire.corridor
Subject: High Speed Rail Project

Mr. Chan,

I received the letter from Marie Corrado requesting participation. I would be glad to participate. I am in Erie County's Office of Economic Development which is within the Department of Environment and Planning. We have tried to combine the various aspects of Planning, Community and Economic Development together. Transportation Planning has been a part of this effort. We also handle the two shortline rail lines that the County owns.

I plan on attending the Buffalo session on Tuesday October 19th. Our primary comment will be the same one we stated in the NYS Rail Plan which was prepared a short time ago, that is: dedicated passenger track, first and foremost. Everything else hinges on that.

I look forward to working with you and your group.

Ken Swanekamp

--

Kenneth Swanekamp | Director Of Business Assistance
Erie County | Environment & Planning
95 Franklin St., Room 1060 | Buffalo, NY 14202
P: (716) 858-6170 | F: (716) 858-7248
Kenneth.Swanekamp@erie.gov

Erie County's vision: Erie County will be a world-class community where People want to live, Businesses want to locate and Tourists want to visit.

Lindsay Zefting

From: dot.sm.mo.empire.corridor [EmpireCorridor@dot.state.ny.us]
Sent: Friday, October 15, 2010 1:22 PM
To: Lindsay Zefting
Subject: FW: GTC as Participating Agency on Empire Corridor High-Speed Rail EIS
Attachments: GTC Comments on the Empire Corridor HSR Tier 1 EIS (10292009).pdf

Follow Up Flag: Follow up
Flag Status: Flagged

From: Rich Perrin [<mailto:RPerrin@gtcmpo.org>]
Sent: Friday, October 15, 2010 9:06 AM
To: dot.sm.mo.empire.corridor
Cc: Traver, Robert (DOT); jstack@gtcmpo.org
Subject: GTC as Participating Agency on Empire Corridor High-Speed Rail EIS

Dear Mr. Chan:

This e-mail serves as confirmation that the Genesee Transportation Council (GTC) would like to serve as a participating agency in the development of the Environmental Impact Statement (EIS) for the Empire Corridor high-speed passenger rail project. As a note, GTC informed the NYS Department of Transportation (NYSDOT) of our interest in serving as an "involved" agency for the development of the Tier 1 EIS on September 15, 2009 via an e-mail to then-project manager Ann Purdue.

Attached are comments that GTC developed in October 2009 in response to the *Federal Register* notice of September 24, 2009 requesting comments on the Tier 1 EIS. We feel that these topics are still relevant and do not have additional comments at this time.

Please contact me at your convenience if you have any questions. I may be reached by telephone at (585) 232-6240 or via e-mail at rperrin@gtcmpo.org.

Thank you for the opportunity to participate in this important initiative.

Sincerely,
Rich

Richard Perrin, AICP
Executive Director
Genesee Transportation Council
50 W. Main St., Suite 8112
Rochester, NY 14614-1227

Phone: (585) 232-6240
Fax: (585) 262-3106
Web: <http://www.gtcmpo.org>

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3. Agency Notification Correspondence

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3.1 Agency Information Requests

Index of Agency Information Requests

Kim, Addie, HNTB Corporation, “Empire Corridor High Speed Rail,” Email communication with Christina Croll, New York State Department of Environmental Conservation. February 8, 2011.

Kays, Karen, Pinyon Environmental, Inc., “Spills Data Request.” Email communication with E. Zuck, New York State Department of Environmental Conservation. February 11, 2011.

Kays, Karen, Pinyon Environmental, Inc., “Empire Corridor High Speed Rail” Email communication with Mike Holt, New York State Department of Environmental Conservation. February 11, 2011.

Grilli, Joseph G., P.E., HNTB Corporation, “Information Request for High Speed Rail Empire Corridor Project.” Letter, March 18, 2011, to the following:

Mr. Gary Kassof, Commander,
U.S. Coast Guard
First Coast Guard District
Battery Park Building
New York, NY 10004-5073

Mr. Scott Striffler, Commander
U.S. Coast Guard
Ninth Coast Guard District
1240 East Ninth Street, Room 2047
Cleveland, OH 44199

Mr. Jeff Herter
New York State Department of State, Division of Coastal Resources, Albany Office
99 Washington Avenue, Suite 100
Albany, NY 12231-0001

Commissioner
New York State Office of Parks, Recreation and Historic Preservation
Agency Building #1, Empire State Plaza
Albany, NY 12238

Ms. Mary Colligan
Assistant Regional Administrator, Protected Resources Division
National Marine Fisheries Service
55 Great Republic Drive
Gloucester, MA 01930

Mr. Peter Colosi
Assistant Regional Administrator, Habitat Conservation Division
National Marine Fisheries Service
55 Great Republic Drive
Gloucester, MA 01930

Mr. Roy Jacobson
New York State Department of Environmental Conservation
Division of Fish, Wildlife and Marine Resources
625 Broadway
Albany, NY 12233-4756

Ms. Tara Salerno
New York State Department of Environmental Conservation- Division of Fish, Wildlife and Marine Resources
New York Natural Heritage Program – Information Services
625 Broadway, 5th Floor
Albany, NY 12233-4757

Mr. Robert Ewing
New York State Department of Environmental Conservation
Division of Environmental Permits, 4th Floor
625 Broadway
Albany, NY 12233-1750

Ms. Anne Secord
United States Fish and Wildlife Service
Wetlands, Northeast Region
3817 Luker Road
Cortland, NY 13045

Kim, Addie, HNTB Corporation, “Empire Corridor High Speed Rail,” Email communication with Nick Conrad, Information Resources Coordinator, New York Natural Heritage Program. April 23, 2021.

Addie Kim

From: Addie Kim
Sent: Tuesday, February 08, 2011 2:10 PM
To: 'christina.croll@oprhp.state.ny.us'
Cc: 'Bargovic, Danielle'; Joe Grilli
Subject: Empire Corridor High Speed Rail
Attachments: Corridor Map_July 28 2010 (2).pdf

Good afternoon Christina,

The New York State Department of Transportation (NYSDOT), in cooperation with the Federal Railroad Administration (FRA), is beginning the environmental review process for the proposed New York State High Speed Rail Empire Corridor Project between Pennsylvania Station in New York City and Niagara Falls, New York. The corridor proceeds north from New York City through Albany and then turns west to Schenectady, passing through Syracuse, Rochester and Buffalo before terminating at Niagara Falls, a distance of 463 miles (Figure 1).

A Tier 1 Environmental Impact Statement (EIS), in accordance with the National Environmental Policy Act (NEPA) of 1969 and the New York State Environmental Quality Review Act (SEQRA), is being completed to evaluate and document potential improvements and projects to intercity passenger rail service within the corridor. The projects identified in the Tier 1 EIS will be subject to detailed environmental review in Tier 2 project-level NEPA documents.

In order to complete the Tier 1 EIS, the project team will be reviewing available data. At this time, we respectfully request any Geographic Information System data regarding parks that have received Land and Water Conservation Funding along or within ½ mile of the 463 mile corridor (Figure 1). While geographic information systems (GIS) data is preferred, any mappable data your office could provide would be greatly appreciated. As I understand it, GIS mapping of municipal parks that have received Land and Water Conservation Funding is available for our use.

If you have any questions, please feel free to contact me.

Best regards,

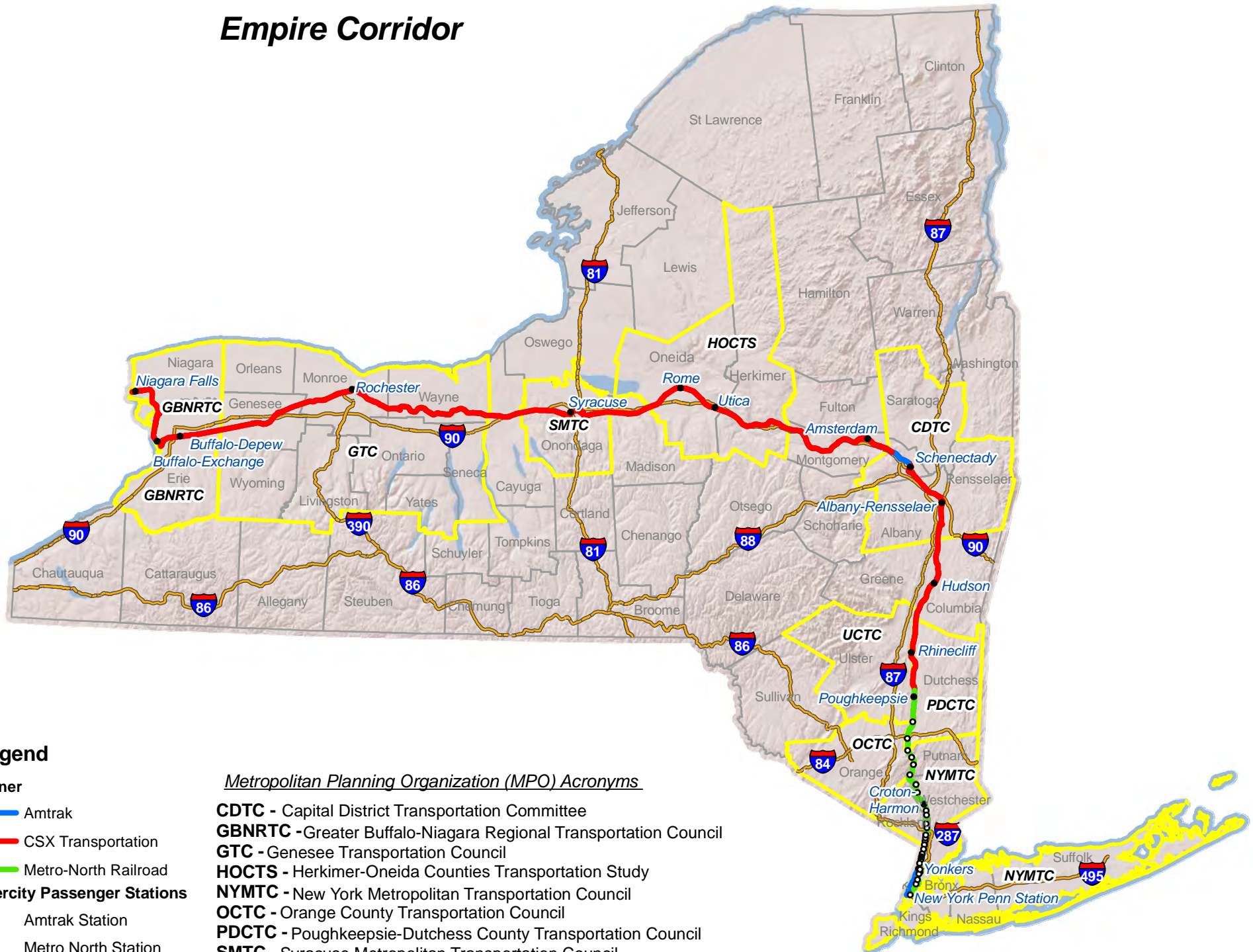
Addie

Addie Kim
Senior Environmental Planner

HNTB Corporation
31 St. James Avenue, Suite 300
Boston, MA 02116

Tel (617) 532-2326
Fax (617) 428-6905

Empire Corridor



Legend

Owner

- Amtrak
- CSX Transportation
- Metro-North Railroad

Intercity Passenger Stations

- Amtrak Station
- Metro North Station

MPO Boundaries

Metropolitan Planning Organization (MPO) Acronyms

- CDTC** - Capital District Transportation Committee
- GBNRTC** - Greater Buffalo-Niagara Regional Transportation Council
- GTC** - Genesee Transportation Council
- HOCTS** - Herkimer-Oneida Counties Transportation Study
- NYMTC** - New York Metropolitan Transportation Council
- OTC** - Orange County Transportation Council
- PDCTC** - Poughkeepsie-Dutchess County Transportation Council
- SMTTC** - Syracuse Metropolitan Transportation Council
- UCTC** - Ulster County Transportation Council

From: Karen Kays
Sent: Friday, February 11, 2011 11:24 AM
To: 'emzuck@gw.dec.state.ny.us'
Subject: Spills Data Request
Attachments: Project_Centerline.zip; centerline_halfmile_buffer.zip; Corridor Map_July 28 2010 (2).pdf

Dear Ms. Zuck,

Thank you for taking the time to speak to me today. Below is further information about the project and a formal request for data. I've also attached our Shape files of the project centerline and ½ mile buffer as well as a general map of the corridor. As discussed, it would be very helpful if you could provide me with any GIS data and the link to the FTP site.

Data request and project information:

The New York State Department of Transportation (NYSDOT), in cooperation with the Federal Railroad Administration (FRA), is beginning the environmental review process for the proposed New York State High Speed Rail Empire Corridor Project between Pennsylvania Station in New York City and Niagara Falls, New York. The corridor proceeds north from New York City through Albany and then turns west to Schenectady, passing through Syracuse, Rochester and Buffalo before terminating at Niagara Falls, a distance of 463 miles (Figure 1).

A Tier 1 Environmental Impact Statement (EIS), in accordance with the National Environmental Policy Act (NEPA) of 1969 and the New York State Environmental Quality Review Act (SEQRA), is being completed to evaluate and document potential improvements and projects to intercity passenger rail service within the corridor. The projects identified in the Tier 1 EIS will be subject to detailed environmental review in Tier 2 project-level NEPA documents.

In order to complete the Tier 1 EIS, the project team will be reviewing available data. At this time, we respectfully request any Geographic Information System data regarding Spills incidents along or within a ½ mile of the 463 mile corridor (Figure 1). While geographic information systems (GIS) data is preferred, any mappable data your office could provide would be greatly appreciated.

Please feel free to contact me if you have any questions. Thank you.

Karen Carling Kays
Environmental Scientist

Pinyon Environmental, Inc.
376 Broadway, Suite 210
Saratoga Springs, NY 12866
518.583.8012 tel
518.691.8693 fax
518.222.6993 cell

Kays@pinyon-env.com
www.pinyon-env.com
Certified DBE in NY, CO, UT

From: Karen Kays
Sent: Friday, February 11, 2011 11:32 AM
To: 'dowinfo@gw.dec.state.ny.us'
Subject: FW: Empire Corridor High Speed Rail
Attachments: Corridor Map_July 28 2010 (2).pdf

Mr. Holt,
A map of the project area is attached.

Karen Carling Kays
Environmental Scientist

Pinyon Environmental, Inc.
518.583.8012 tel

From: Karen Kays
Sent: Friday, February 11, 2011 11:27 AM
To: 'dowinfo@gw.dec.state.ny.us'
Subject: Empire Corridor High Speed Rail

Attention: Mr. Mike Holt

Good Afternoon Mr. Holt:

The New York State Department of Transportation (NYSDOT), in cooperation with the Federal Railroad Administration (FRA), is beginning the environmental review process for the proposed New York State High Speed Rail Empire Corridor Project between Pennsylvania Station in New York City and Niagara Falls, New York. The corridor proceeds north from New York City through Albany and then turns west to Schenectady, passing through Syracuse, Rochester and Buffalo before terminating at Niagara Falls, a distance of 463 miles (Figure 1).

A Tier 1 Environmental Impact Statement (EIS), in accordance with the National Environmental Policy Act (NEPA) of 1969 and the New York State Environmental Quality Review Act (SEQRA), is being completed to evaluate and document potential improvements and projects to intercity passenger rail service within the corridor. The projects identified in the Tier 1 EIS will be subject to detailed environmental review in Tier 2 project-level NEPA documents.

In order to complete the Tier 1 EIS, the project team will be reviewing available data. At this time, we respectfully request any Geographic Information System data regarding public water supply and watershed along or within 300 feet of the 463 mile corridor (Figure 1). While geographic information systems (GIS) data is preferred, any mappable data your office could provide would be greatly appreciated.

If you have any questions, please feel free to contact me. Thank you.

Karen Carling Kays
Environmental Scientist

Pinyon Environmental, Inc.
376 Broadway, Suite 210
Saratoga Springs, NY 12866
518.583.8012 tel

518.691.8693 fax
518.222.6993 cell

Kays@pinyon-env.com
www.pinyon-env.com

Certified DBE in NY, CO, UT



March 18, 2011

Gary Kassof
Commander (obr)
U.S. Coast Guard
First Coast Guard District
Battery Park Building
New York, NY 10004-5073

Subject: Information Request for High Speed Rail Empire Corridor Project (PIN S937.51.171)

Dear Mr. Kassof:

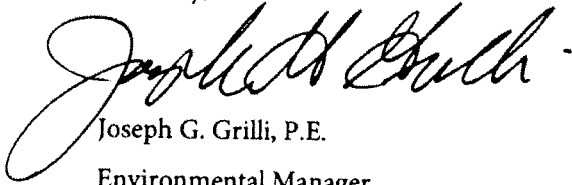
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Per previous correspondence with NYSDOT, the U.S. Coast Guard has agreed to be a cooperating agency for the Tier 1 EIS. We respectfully request information on navigational/regulatory issues of concern related to the waterways along the project route (see the attached project location and base maps and Major Streams and Rivers table). We are requesting information on which of the waterways in the project area are under federal jurisdiction for navigation, so these may be considered in the environmental inventory and Tier 1 EIS. We would also like to request a copy of the existing USCG bridge permit(s), as appropriate. Information regarding plans for dredging is also requested.

If you have any questions, please feel free to contact me at (617) 532-2244 or jgrilli@hntb.com.

Sincerely,

A handwritten signature in black ink, appearing to read "Joseph G. Grilli". The signature is fluid and cursive, with a large initial "J" and a long horizontal stroke extending to the right.

Joseph G. Grilli, P.E.

Environmental Manager

cc: David Chan, Project Manager, NYSDOT

Scot Striffler, Ninth Coast Guard District

Attachment(s): Figure 1 – Project Location Map

Base maps (12 sheets)

Attachment A: Major Streams and Rivers within 300 Feet of the Track Centerline



March 18, 2011

Scot Striffler
Commander (dpb),
U.S. Coast Guard
Ninth Coast Guard District
1240 East Ninth Street
Room 2047
Cleveland, OH 44199

Subject: Information Request for High Speed Rail Empire Corridor Project (PIN S937.51.171)

Dear Mr. Striffler:

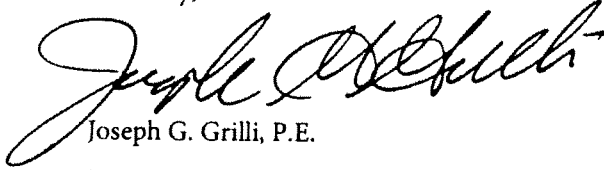
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If you have any questions, please feel free to contact me at (617) 532-2244 or jgrilli@hntb.com.

Sincerely,

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Joseph G. Grilli, P.E.

Environmental Manager

cc: David Chan, Project Manager, NYSDOT

Gary Kassof, First Coast Guard District

Attachment(s): Figure 1 – Project Location Map

Base maps (12 sheets)

Attachment A: Major Streams and Rivers within 300 Feet of the Track Centerline



March 18, 2011

Jeff Herter
NYS Department of State, Division of Coastal Resources, Albany Office
99 Washington Avenue
Suite 100
Albany, NY 12231-0001

Subject: Information Request for High Speed Rail Empire Corridor Project (PIN S937.51.171)

Dear Mr. Herter:

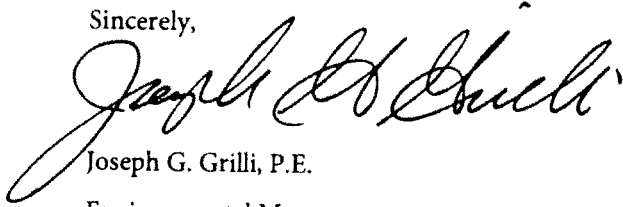
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A Tier 1 Environmental Impact Statement (EIS), in accordance with the National Environmental Policy Act (NEPA) of 1969 and the New York State Environmental Quality Review Act (SEQRA), is being completed to evaluate and document potential improvements and projects to intercity passenger rail service within the corridor. The projects identified in the Tier 1 EIS will be subject to detailed environmental review in Tier 2 project-level NEPA documents.

We respectfully request information on coastal resources and coastal zone management mapping of Inland Designated Waterways, preferably in GIS format. We are writing to request information on municipalities along the proposed action with an approved Local Waterfront Revitalization Program or Inland Designated Waterways along the project. Information in digital (GIS or other electronic mapping) files showing the location of LWRP communities and Inland Designated Waterways is also requested. The attached maps and tables provide information on the project location and nearby major waterways.

If you have any questions, please feel free to contact me at (617) 532-2244 or jgrilli@hntb.com.

Sincerely,

A handwritten signature in black ink, appearing to read "Joseph G. Grilli". The signature is fluid and cursive, with a large initial "J" and "G".

Joseph G. Grilli, P.E.

Environmental Manager

cc: David Chan, Project Manager, NYSDOT

Attachment(s): Figure 1 – Project Location Map

Base maps (12 sheets)

Attachment A: Major Streams and Rivers within 300 Feet of the Track Centerline

List of Empire Corridor Communities



March 18, 2011

Commissioner
NYS Office of Parks, Recreation and Historic Preservation
Agency Building #1, Empire State Plaza
Albany, NY 12238

Subject: Information Request for High Speed Rail Empire Corridor Project (PIN S937.51.171)

Dear Commissioner :

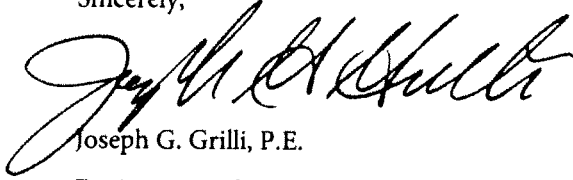
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Per previous correspondence with NYSDOT, the New York State Office of Parks, Recreation and Historic Preservation has agreed to be a cooperating agency for the Tier 1 EIS. We respectfully request information on parklands in the immediate project vicinity. We are requesting information and updated GIS mapping for federal, state, county, and municipal parks. We are also requesting information on Land and Water Conservation Funded federal, state, county, and local parks in the project vicinity. The attached maps and tables provide information on the project location and nearby major waterways.

If you have any questions, please feel free to contact me at (617) 532-2244 or jgrilli@hntb.com.

Sincerely,

A handwritten signature in black ink, appearing to read "Joe Grilli". The signature is fluid and cursive, with the first name "Joe" and last name "Grilli" clearly distinguishable.

Joseph G. Grilli, P.E.

Environmental Manager

cc: David Chan, Project Manager, NYSDOT

Attachment(s): Figure 1 – Project Location Map
Base maps (12 sheets)
List of Empire Corridor Communities



March 18, 2011

Ms. Mary Colligan
Assistant Regional Administrator, Protected Resources Division
National Marine Fisheries Service
55 Great Republic Drive
Gloucester, MA 01930

Subject: Information Request for High Speed Rail Empire Corridor Project (PIN S937.51.171)

Dear Ms. Colligan:

The New York State Department of Transportation (NYSDOT), in cooperation with the Federal Railroad Administration (FRA), is beginning the environmental review process for the proposed New York State High Speed Rail Empire Corridor Project between Pennsylvania Station in New York City and Niagara Falls, New York. The corridor proceeds north from New York City through Albany and then turns west to Schenectady, passing through Syracuse, Rochester and Buffalo before terminating at Niagara Falls, a distance of 463 miles (Figure 1).

A Tier 1 Environmental Impact Statement (EIS), in accordance with the National Environmental Policy Act (NEPA) of 1969 and the New York State Environmental Quality Review Act (SEQRA), is being completed to evaluate and document potential improvements and projects to intercity passenger rail service within the corridor. The projects identified in the Tier 1 EIS will be subject to detailed environmental review in Tier 2 project-level NEPA documents.

NYSDOT has previously corresponded with your agency to notify you of the project. We are now writing to inquire about species protected under Section 7 of the United States Endangered Species Act and critical habitats designated under Section 7 that may be present in the project area (Figure 1). We would also like to request information in digital (GIS or other electronic mapping) files showing the location of any such species. For your reference, a list of major streams and rivers located within 300 feet of the track centerline are included as Attachment A (please note, the attached list is not a comprehensive list of all water-bodies within the project area).

If you have any questions, please feel free to contact me at (617) 532-2244 or jgrilli@hntb.com.

Sincerely,

A handwritten signature in black ink, appearing to read "Joseph G. Grilli". The signature is fluid and cursive, with a large initial "J" and "G".

Joseph G. Grilli, P.E.
Environmental Manager

cc: David Chan, Project Manager, NYSDOT

Peter Colosi, NMFS Habitat Conservation Division

Attachments: Figure 1 – Project Location Map

Attachment A: Major Streams and Rivers within 300 Feet of the Track Centerline



March 18, 2011

Mr. Peter Colosi
Assistant Regional Administrator, Habitat Conservation Division
National Marine Fisheries Service
55 Great Republic Drive
Gloucester, MA 01930

Subject: Information Request for High Speed Rail Empire Corridor Project (PIN S937.51.171)

Dear Mr. Colosi:

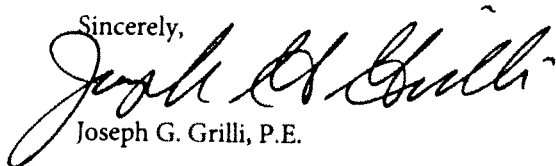
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NYSDOT has previously corresponded with your agency to notify you of the project. We are now writing to inquire about Essential Fish Habitats protected under the U.S. Magnuson-Stevens Fishery Conservation and Management Act and anadromous fisheries in the Hudson River that may be present in the project area (Figure 1). We would also like to request information in digital (GIS or other electronic mapping) files showing the location of any such species. For your reference, a list of major streams and rivers located within 300 feet of the track centerline are included as Attachment A (please note, the attached list is not a comprehensive list of all water-bodies within the project area).

If you have any questions, please feel free to contact me at (617) 532-2244 or jgrilli@hntb.com.

Sincerely,

A handwritten signature in black ink, appearing to read "Joseph G. Grilli". The signature is fluid and cursive, with the first name "Joseph" being the most prominent part.

Joseph G. Grilli, P.E.

Environmental Manager

cc: David Chan, Project Manager, NYSDOT

Mary Colligan, NMFS Protected Resources Division

Attachments: Figure 1 – Project Location Map

Attachment A: Major Streams and Rivers within 300 Feet of the Track Centerline



March 18, 2011

Mr. Roy Jacobson
New York State Department of Environmental Conservation
Division of Fish, Wildlife and Marine Resources
625 Broadway
Albany, New York 12233-4756

Subject: Information Request for High Speed Rail Empire Corridor Project (PIN S937.51.171)

Dear Mr. Jacobson:

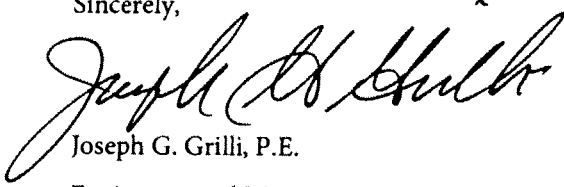
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A Tier 1 Environmental Impact Statement (EIS), in accordance with the National Environmental Policy Act (NEPA) of 1969 and the New York State Environmental Quality Review Act (SEQRA), is being completed to evaluate and document potential improvements and projects to intercity passenger rail service within the corridor. The projects identified in the Tier 1 EIS will be subject to detailed environmental review in Tier 2 project-level NEPA documents.

NYSDOT has previously corresponded with your agency to notify you of the project. We are now writing to request digital (GIS or other electronic mapping) files regarding wild and scenic rivers along or within 300 feet of the 436 mile corridor (Figure 1).

If you have any questions, please feel free to contact me at (617) 532-2244 or jgrilli@hntb.com.

Sincerely,

A handwritten signature in black ink, appearing to read "Joseph G. Grilli". The signature is fluid and cursive, with a small "h" at the end.

Joseph G. Grilli, P.E.

Environmental Manager

cc: David Chan, Project Manager, NYSDOT

Attachment: Figure 1 – Project Location Map

Attachment A: Major Streams and Rivers within 300 Feet of the Track Centerline



March 18, 2011

Ms. Tara Salerno
NYSDEC-DFWMR
NY Natural Heritage Program-Information Services
625 Broadway, 5th Floor
Albany, NY 12233-4757

Subject: Information Request for High Speed Rail Empire Corridor Project (PIN S937.51.171)

Dear Ms. Salerno:

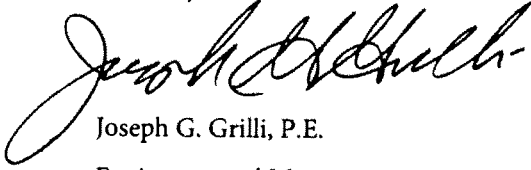
The New York State Department of Transportation (NYSDOT), in cooperation with the Federal Railroad Administration (FRA), is beginning the environmental review process for the proposed New York State High Speed Rail Empire Corridor Project between Pennsylvania Station in New York City and Niagara Falls, New York. The corridor proceeds north from New York City through Albany and then turns west to Schenectady, passing through Syracuse, Rochester and Buffalo before terminating at Niagara Falls, a distance of 463 miles (Figure 1).

A Tier 1 Environmental Impact Statement (EIS), in accordance with the National Environmental Policy Act (NEPA) of 1969 and the New York State Environmental Quality Review Act (SEQRA), is being completed to evaluate and document potential improvements and projects to intercity passenger rail service within the corridor. The projects identified in the Tier 1 EIS will be subject to detailed environmental review in Tier 2 project-level NEPA documents.

NYSDOT has previously corresponded with your agency to notify you of the project. We are now writing to request digital (GIS or other electronic mapping) files regarding "significant natural communities" and other areas protected by regulation, federally- and state-threatened, endangered, or other species of special concern, available for the 463 mile corridor (Figure 1 and Base Maps).

If you have any questions, please feel free to contact me at (617) 532-2244 or jgrilli@hntb.com.

Sincerely,

A handwritten signature in black ink, appearing to read "Joseph G. Grilli". The signature is fluid and cursive, with the first name "Joseph" being more prominent and the last name "Grilli" following in a similar style.

Joseph G. Grilli, P.E.

Environmental Manager

cc: David Chan, Project Manager, NYSDOT

Attachment: Figure 1 – Project Location Map
Base Maps (12 sheets)



March 18, 2011

Mr. Robert Ewing
New York State Department of Environmental Conservation
Division of Environmental Permits
4th Floor
625 Broadway
Albany, NY 12233-1750

Subject: Information Request for High Speed Rail Empire Corridor Project (PIN S937.51.171)

Dear Mr. Ewing:

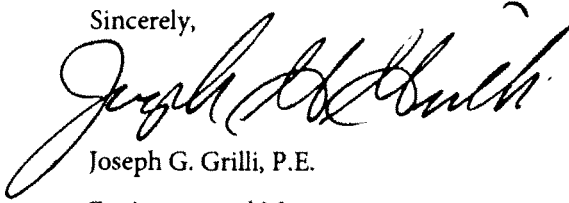
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A Tier 1 Environmental Impact Statement (EIS), in accordance with the National Environmental Policy Act (NEPA) of 1969 and the New York State Environmental Quality Review Act (SEQRA), is being completed to evaluate and document potential improvements and projects to intercity passenger rail service within the corridor. The projects identified in the Tier 1 EIS will be subject to detailed environmental review in Tier 2 project-level NEPA documents.

NYSDOT has previously corresponded with your agency to notify you of the project. We now are writing to request digital (GIS or other electronic mapping) files regarding SEQR critical areas along or within 300 feet of the 463 mile corridor (Figure 1 and Base Maps).

If you have any questions, please feel free to contact me at (617) 532-2244 or jgrilli@hntb.com.

Sincerely,

A handwritten signature in black ink, appearing to read "Joseph G. Grilli". The signature is fluid and cursive, with the first name "Joseph" being the most prominent part.

Joseph G. Grilli, P.E.

Environmental Manager

cc: David Chan, Project Manager, NYSDOT

Attachment: Figure 1 – Project Location Map
Base Maps (12 sheets)



March 18, 2011

Ms. Anne Secord
United States Fish and Wildlife Service
Wetlands, Northeast Region
3817 Luker Road
Cortland, NY 13045

Subject: Information Request for High Speed Rail Empire Corridor Project (PIN S937.51.171)

Dear Ms. Secord:

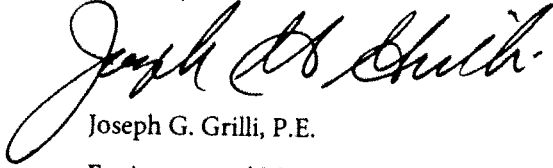
The New York State Department of Transportation (NYSDOT), in cooperation with the Federal Railroad Administration (FRA), is beginning the environmental review process for the proposed New York State High Speed Rail Empire Corridor Project between Pennsylvania Station in New York City and Niagara Falls, New York. The corridor proceeds north from New York City through Albany and then turns west to Schenectady, passing through Syracuse, Rochester and Buffalo before terminating at Niagara Falls, a distance of 463 miles (Figure 1).

A Tier 1 Environmental Impact Statement (EIS), in accordance with the National Environmental Policy Act (NEPA) of 1969 and the New York State Environmental Quality Review Act (SEQRA), is being completed to evaluate and document potential improvements and projects to intercity passenger rail service within the corridor. The projects identified in the Tier 1 EIS will be subject to detailed environmental review in Tier 2 project-level NEPA documents.

NYSDOT has previously corresponded with your agency to notify you of the project. We are now writing to inquire about federally- and state-threatened, endangered, or other species of special concern that may be present in the project area (Figure 1 and Base Maps). We would also like to request information in digital (GIS or other electronic mapping) files showing the location of any such species.

If you have any questions, please feel free to contact me at (617) 532-2244 or jgrilli@hntb.com.

Sincerely,

A handwritten signature in black ink, appearing to read "Joseph G. Grilli". The signature is fluid and cursive, with a large initial "J" and a stylized "G".

Joseph G. Grilli, P.E.

Environmental Manager

cc: David Chan, Project Manager, NYSDOT

Attachment: Figure 1 – Project Location Map
Base Maps (12 sheets)

ATTACHMENTS

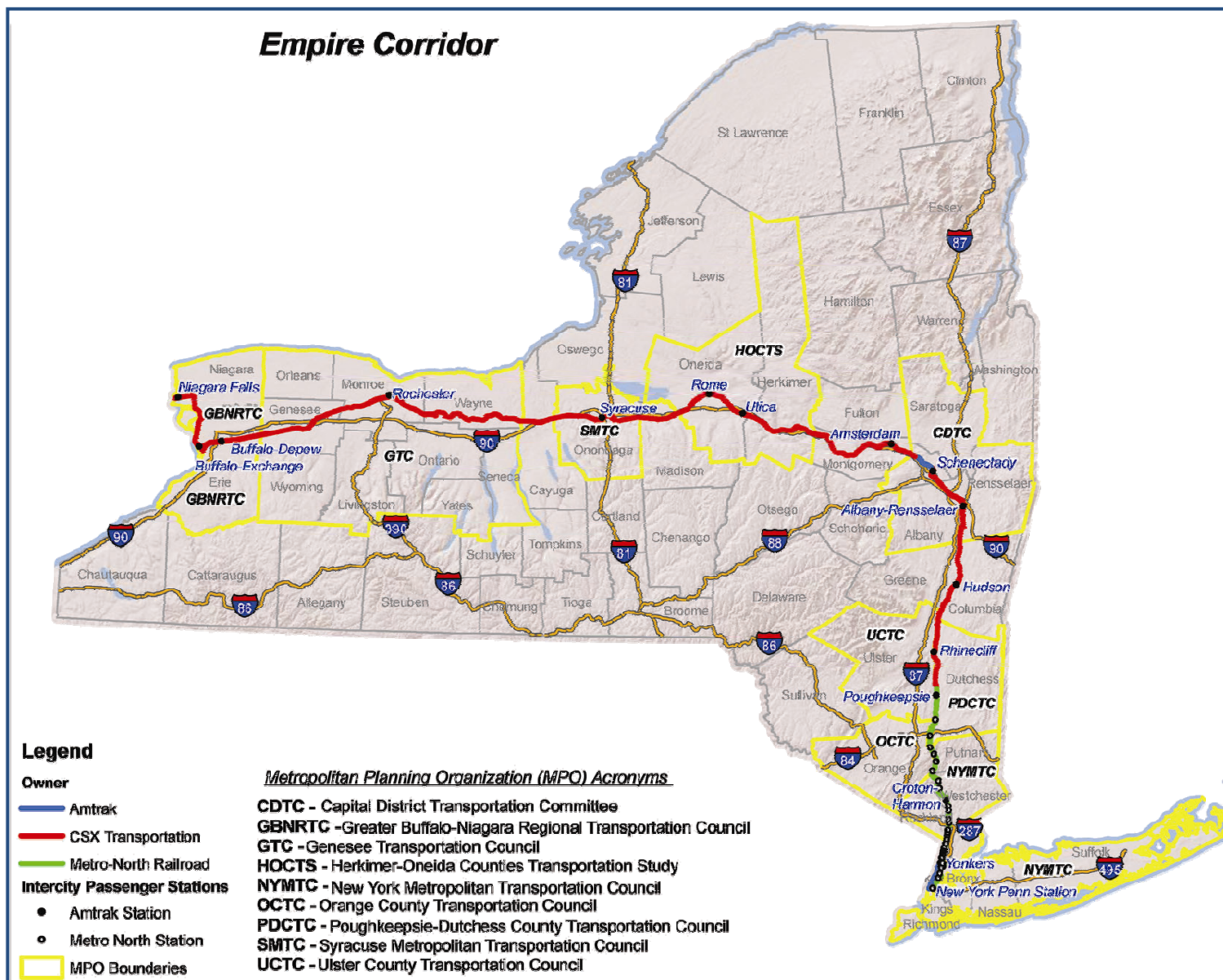
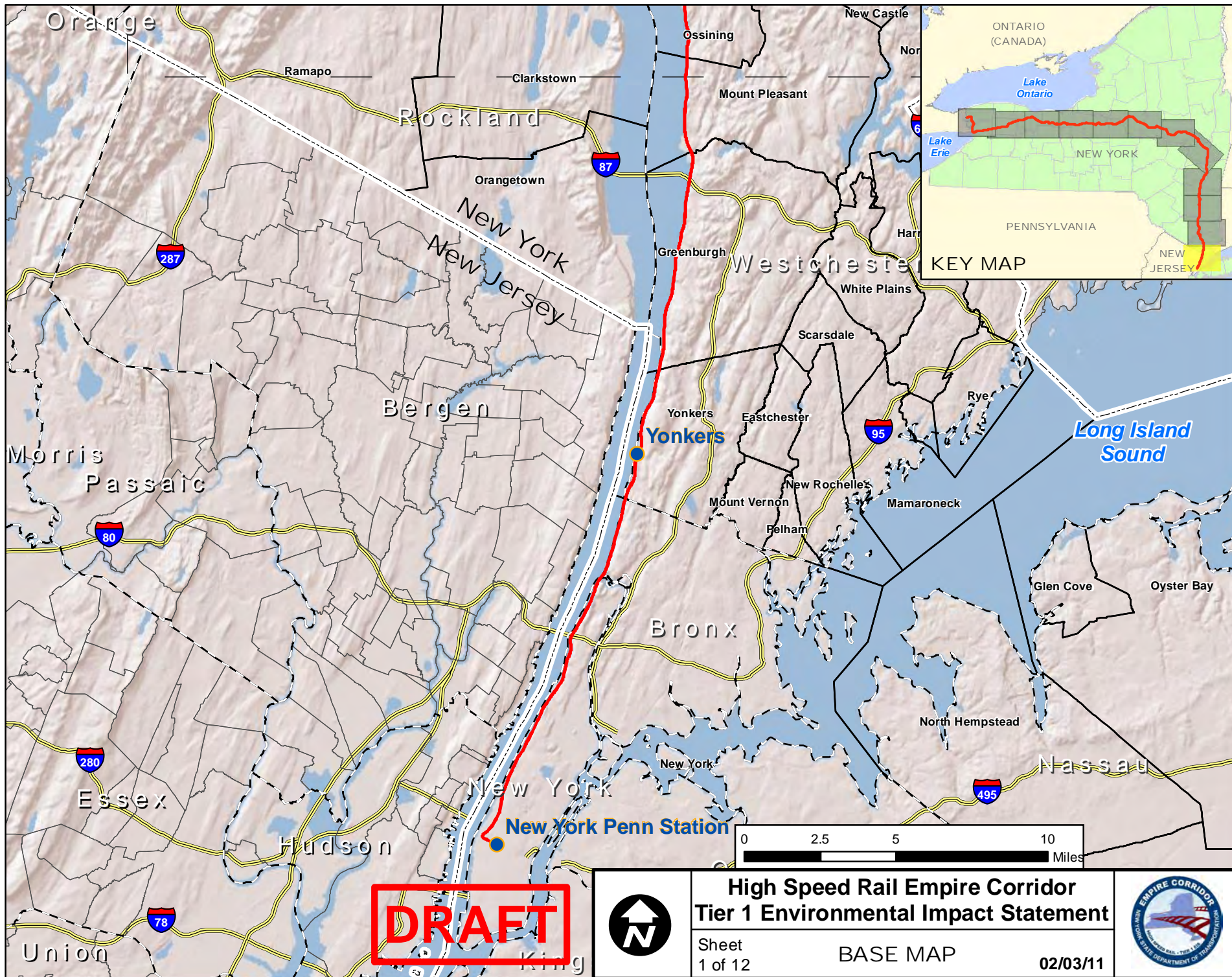
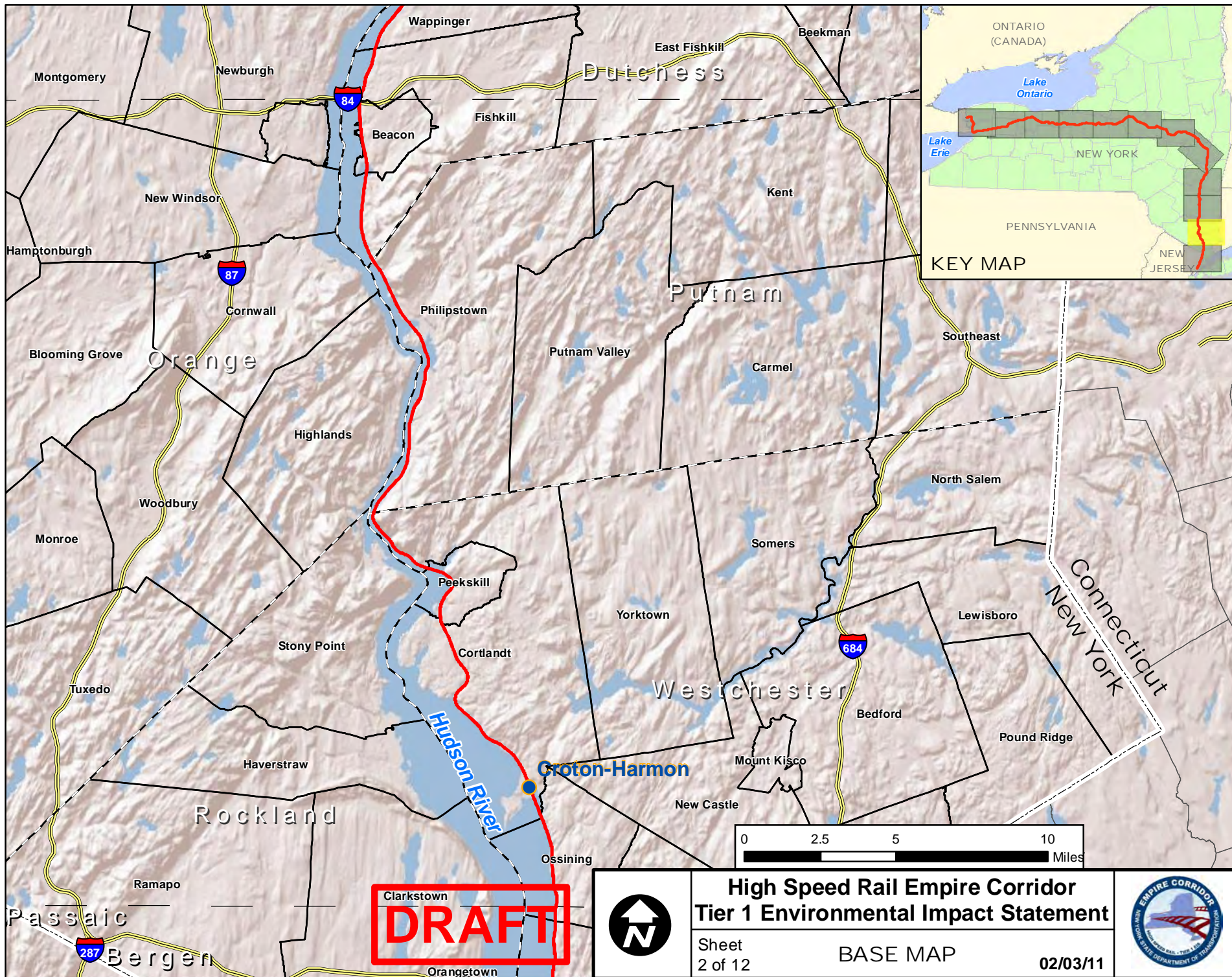
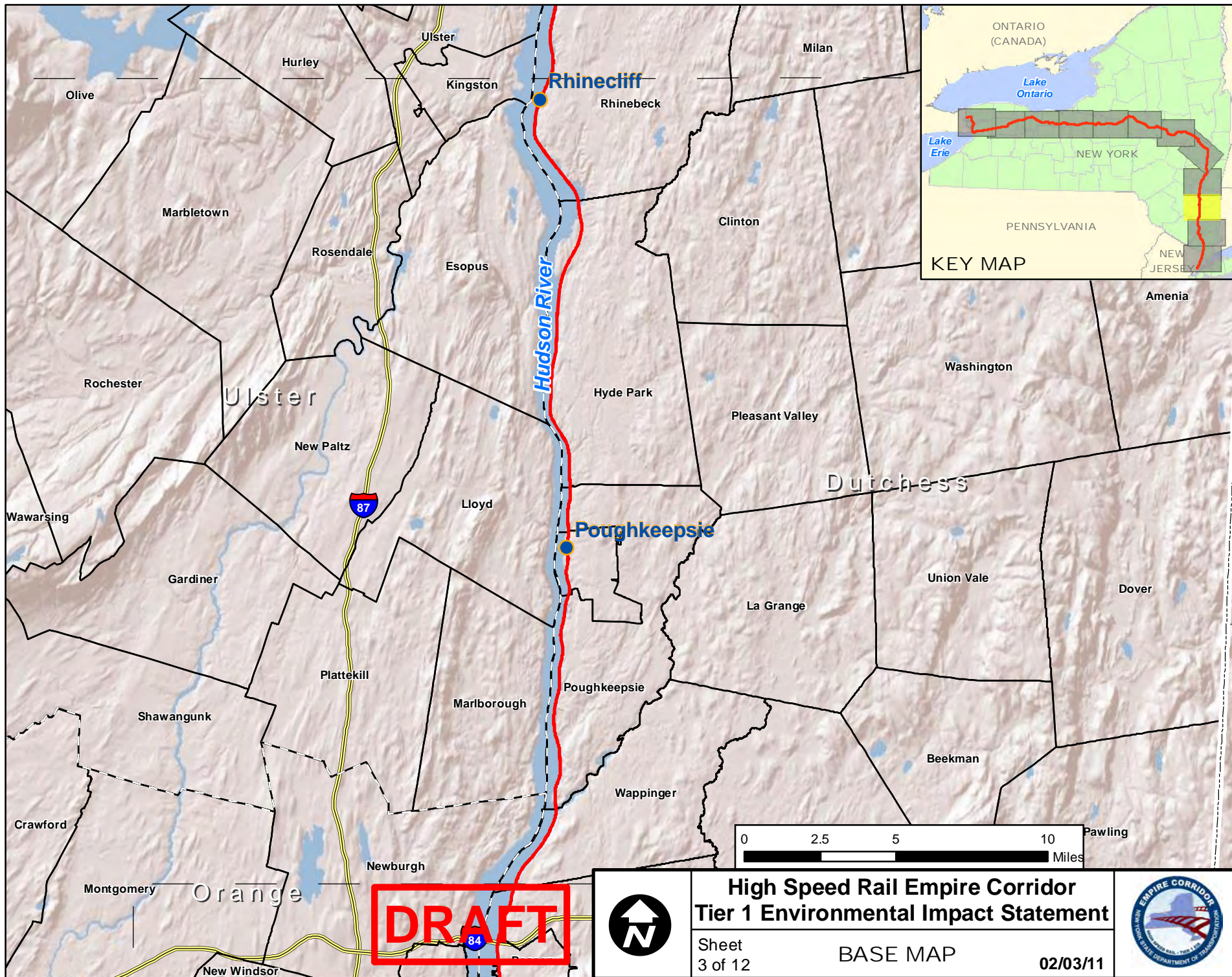


Figure 1—Project Location Map







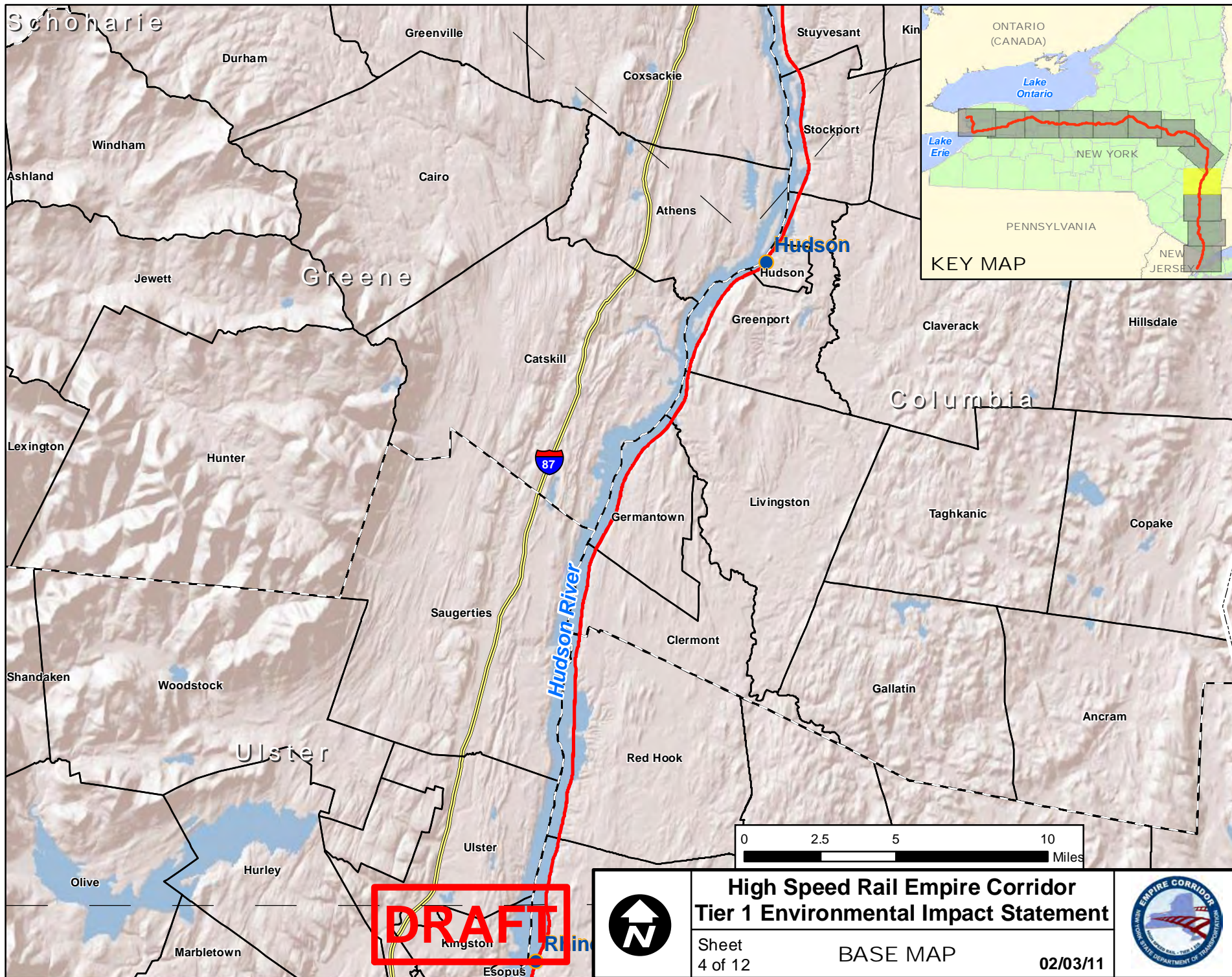
**High Speed Rail Empire Corridor
Tier 1 Environmental Impact Statement**

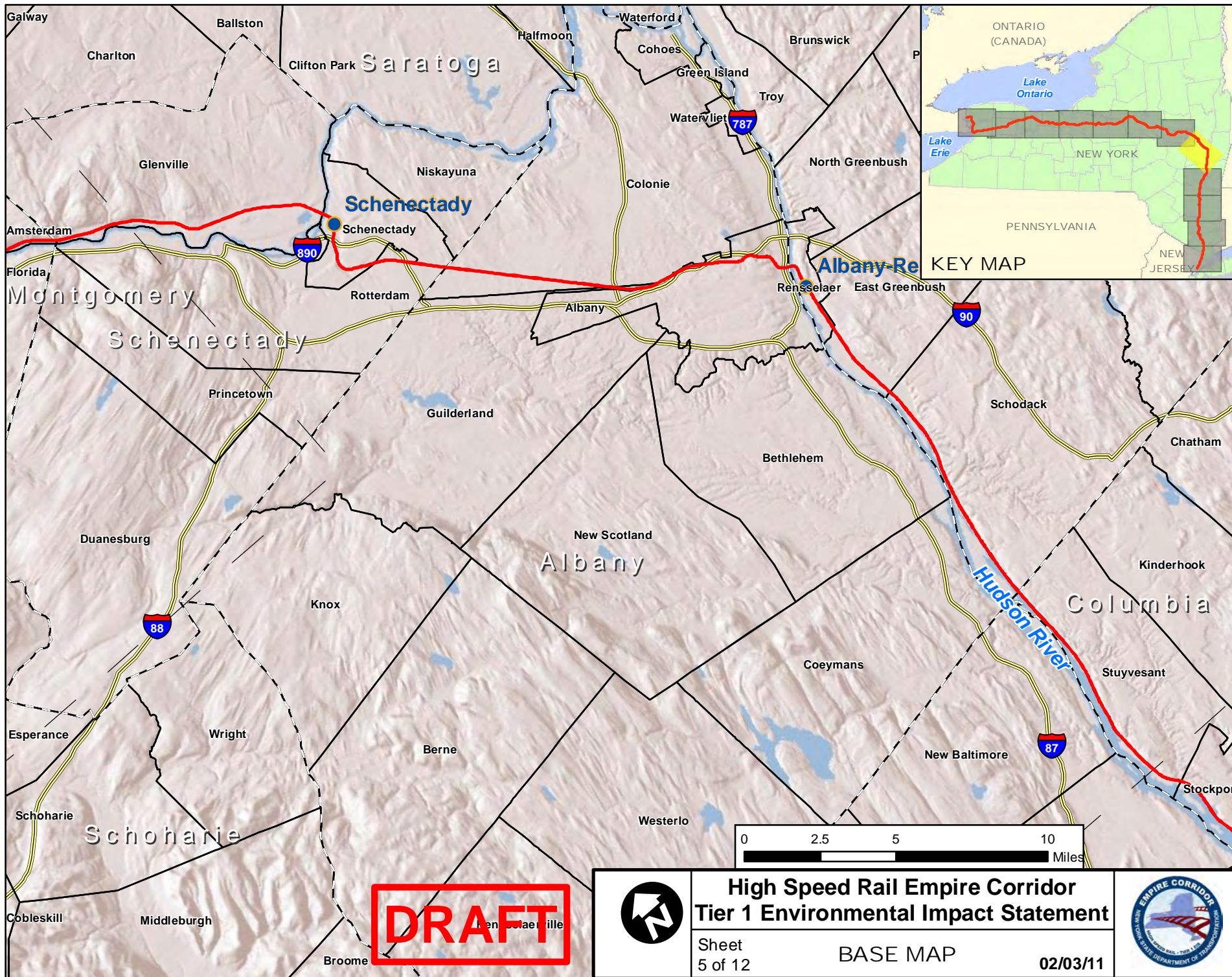
Sheet
3 of 12

BASE MAP

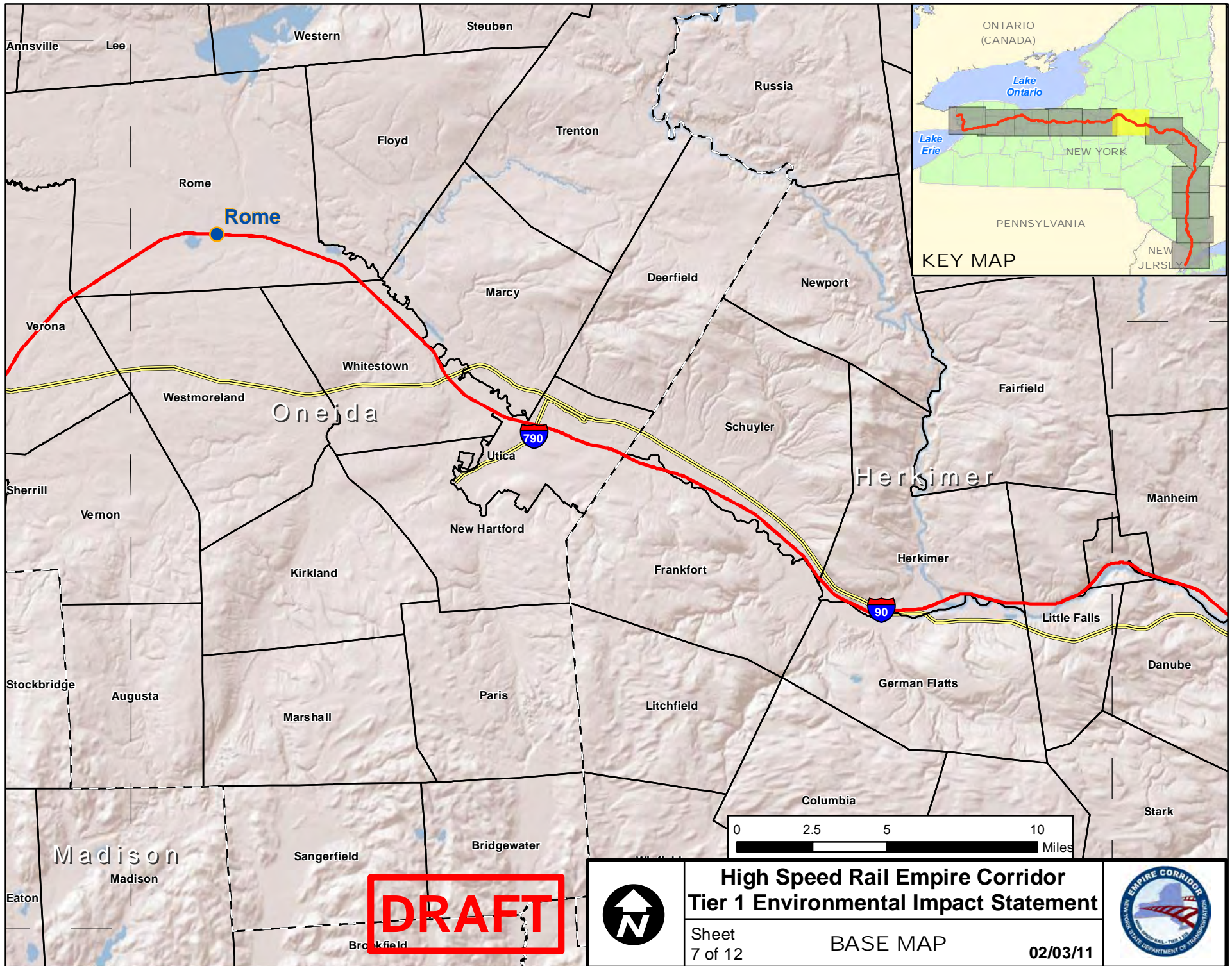
02/03/11

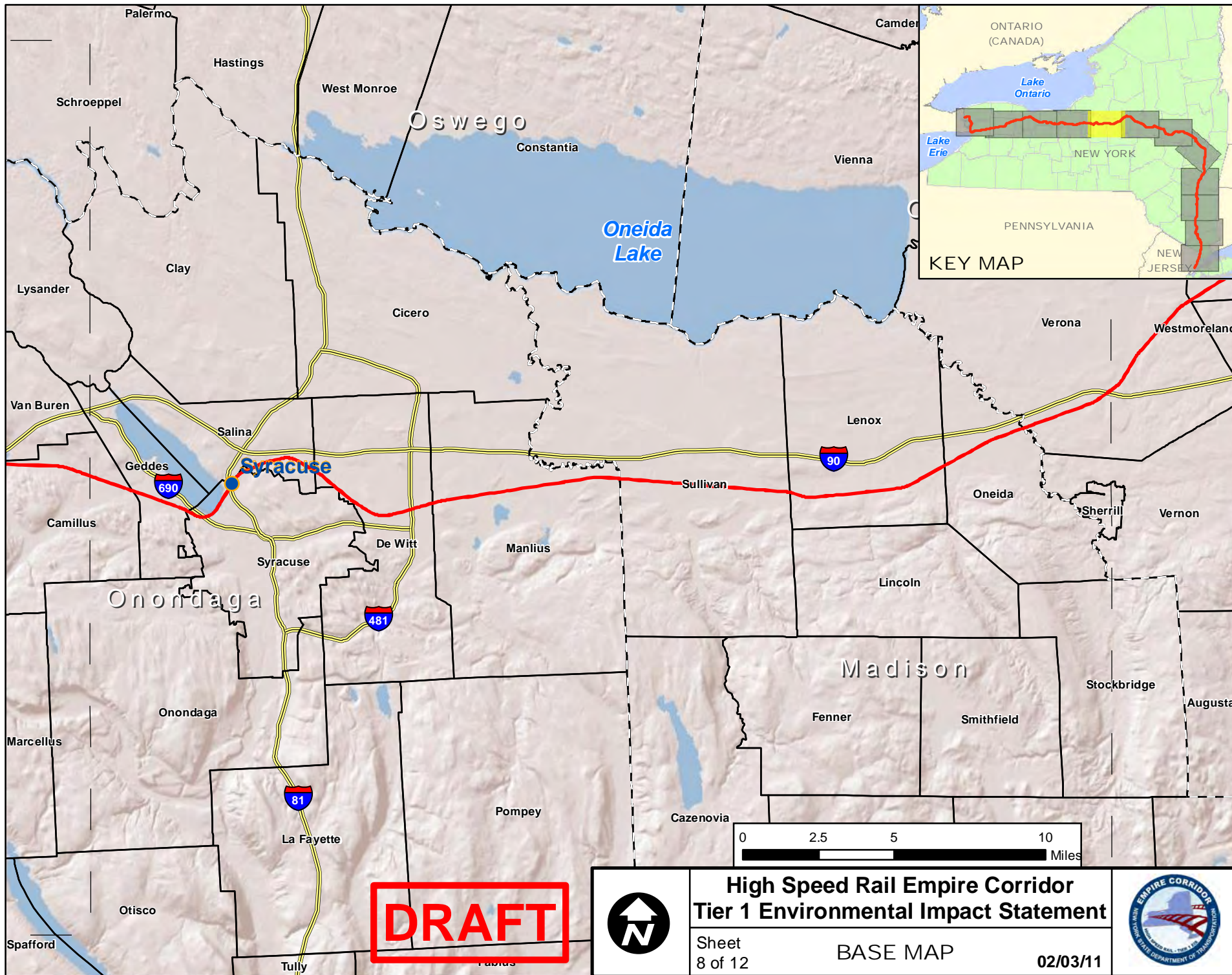








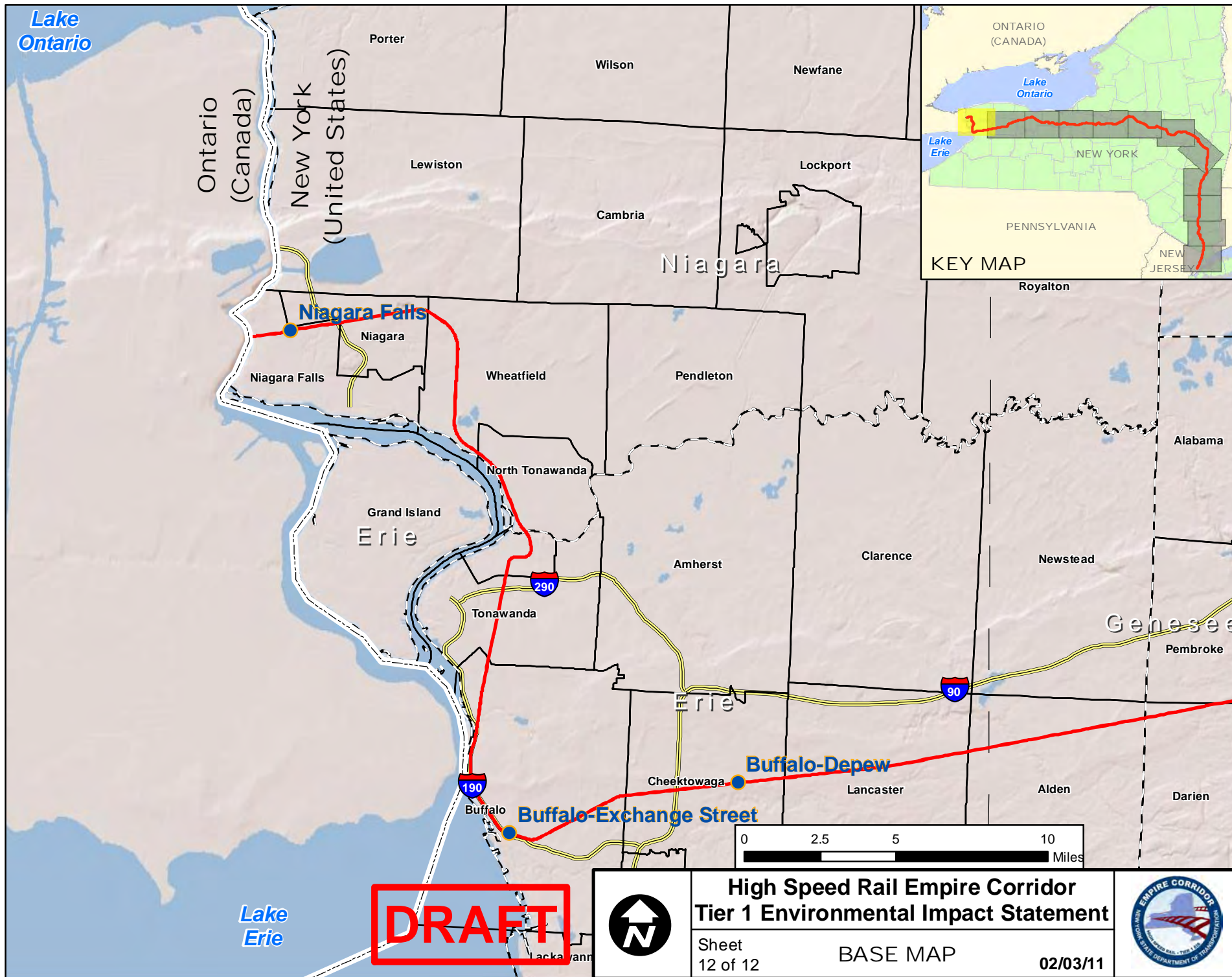












Attachment A
Major Stream and Rivers within 300 Feet of the Track Centerline
Empire Corridor, New York

County (Approximate Mile Post)	River/Stream Location (Approximate Mile Post)	River/Stream Name
New York (0-11.5)	none	
Bronx (11.5-14)	none	
Westchester (14-45)	15 23 24 26.5 29.5 31 33 34.5 36 37 37.5 40 42	Undetermined Name Undetermined Name Undetermined Name Undetermined Name Kemeys Cove Undetermined Name Undetermined Name Undetermined Name Brinton Brook Undetermined Name Undetermined Name Undetermined Name Undetermined Name
Putnam (45 -54.5)	52 54	Foundry Cove Breakneck Brook
Dutchess (54.5-75/QC76-QC100.5)	56 56.5 58 61 63 65 67 73.5 QC 77 QC 79.5 QC 83 QC 85 QC 86 QC 87 QC 91 QC 92.5 QC 94.5 QC 96 QC 98	Cascade Brook Gordons Brook Fishkill Creek Unnamed Unnamed Wappinger Creek Tributary to Cobalt Lake Fall Kill Maritje Kill Crum Kill Indian Kill North Staatsburg Creek Vandenburgh Cove Unnamed Astor Cove Unnamed Mudder Kill South Bay North Bay
Columbia (QC100.5-QC129.5)	QC 103.5 QC 108 QC 115.5 QC 118.5 QC 121 QC 126 QC 126.5	Unnamed Roeliff Jensen Kill North Bay Stockport Creek Unnamed Mill Creek Unnamed
Rensselaer (QC129.5-QC143)	QC 129.5 QC 133 QC 134 QC 135 QC 136 QC 139 QC 141.5	Unnamed Muitzes Kill Vlockie Kill Moordener Kill Papscanee Creek Papscanee Creek Mill Creek
Albany (QC143-QC155)	QC 143 QC 146 QC 149 QC 154	Hudson River Unnamed Rensselaer lake Lisha Kill
Schenectady (QC155-QC170/QG42)	QC 160 QC 161 QC 166 QC 168 QC 169	Mohawk River/ Erie Canal Collins Creek Washout Creek Verf Kill Chaughtanoonda Creek
Montgomery (QC170/QG42-QC210)	QC 170.5 QC 174 QC 176 QC 178.5	Compaanen Kill Unnamed Unnamed McQueen Creek

Attachment A
Major Stream and Rivers within 300 Feet of the Track Centerline
Empire Corridor, New York

County (Approximate Mile Post)	River/Stream Location (Approximate Mile Post)	River/Stream Name
	QC 180 QC 185 QC 186.5 QC 190.5 QC 194 QC 196 QC 197 QC 199 QC 203.5 QC 204 QC 205 QC 207 QC 207.5 QC 209.5	Unnamed Unnamed Cayadetta Creek Briggs Run Unnamed Unnamed Unnamed Unnamed Caroga Creek Mather Creek Unnamed Zimmerman Creek Timmerman Creek Crum Creek
Herkimer (QC210-QC235)	QC 210 QC 211 QC 214 QC 215 QC 220 QC 223 QC 234 QC 234.5	East Canada Creek Unnamed Unnamed Unnamed Beaver Brook West Canada Creek Mohawk River Ferguson Creek
Oneida (QC235-QC264)	QC 235.5 QC 240.5 QC 244.5 QC 248.5 QC 256.5 QC 261	Unnamed Sauquoit Creek Oriskany Creek Mohawk River Mad Creek Stony Creek
Madison (QC264-QC278)	QC 264 QC 266 QC 268.5 QC 270 QC 272 QC 274 QC 275 QC 276.5	Oneida Creek Cowaselon Creek Duck Settlement Creek Canastota Creek Old Erie Canal Unnamed Unnamed Chittenango Creek
Onondaga (QC278-QC309)	QC 278.5 QC 280.5 QC 282.5 QC 285 QC 287 QC 292 QC 295 QC 296.5 QC 302 QC 302.5-QC 303 QC 303.5 QC 305 QC 308 QC 308.5	Pools Brook Lake Brook Limestone Creek Butternut Creek South Branch Ley Creek Barge Canal Geddes Brook Nine Mile Creek Bitter Brook Old Erie Canal Dead Creek Unnamed Unnamed Unnamed
Cayuga (QC309-QC320)	QC 311.5 QC 312 QC 312.5 QC 316 QC 319.5	Unnamed Putnam Brook Spring Brook Unnamed Erie Canal
Wayne (QC320-QC357)	QC 320 QC 323 QC 325.5 QC 327 QC 335 QC 336 QC 339 QC 341 QC 342 QC 343.5	Crusoe Creek Black Creek Unnamed Black Creek Erie Canal Canandaigua Creek Erie Canal Unnamed Ganargua Creek Red Creek

Attachment A
Major Stream and Rivers within 300 Feet of the Track Centerline
Empire Corridor, New York

County (Approximate Mile Post)	River/Stream Location (Approximate Mile Post)	River/Stream Name
	QC 346 QC 348 QC 349.5 QC 351 QC 355	Ganargua Creek Unnamed Red Creek Unnamed Unnamed
Monroe (QC357-QC388)	QC 360 QC 361.5 QC 363 QC 365.5 QC 371.5 QC 374.5 QC 376 QC 377.5 QC 379 QC 381.5 QC 382 QC 384.5 QC 385.5 QC 386	Unnamed Unnamed Irondequoit Creek Allen Creek Genesee River Erie Canal Unnamed Unnamed Unnamed Unnamed Unnamed Little Black Creek Unnamed Black Creek
Genesee (QC388-QC418)	QC 389 QC 392.5 QC 394 QC 395 QC 396.5 QC 398.5 QC 399.5 QC 401 QC 404.5 QC 407 QC 408.5 QC 414 QC 416	Unnamed Robins Brook Robins Brook Unnamed Black Creek Bigelow Creek Bigelow Creek Unnamed Tonawanda Creek Unnamed Bowen Creek Murder Creek Unnamed
Erie (QC418-QC439/QDN1-QDN13)	QC 418.5 QC 422.5 QC 425.5 QDN 6 QDN 7.5 QDN 12 QDN 12.5	Unnamed Ellicott Creek Unnamed Scajaquada Creek Unnamed Unnamed Ellicott Creek
Niagara (QDN13-QDN28)	QDN 13.5 QDN 14.5 QDN 16.5 QDN 20 QDN 21 QDN 25 QDN 26	Tonawanda Creek/Erie Canal Unnamed Unnamed Bergholtz Creek/ Sawyer Creek Cayuga Creek No name Gill Creek

EMPIRE CORRIDOR COMMUNITIES

City/Town/County

New York County

1. Manhattan

Bronx County

2. Bronx

Westchester County

3. Yonkers
4. Greenburgh
5. Mount Pleasant
6. Ossining
7. Cortlandt
8. Peekskill

Putnam County

9. Philipstown

City/Town/County

Dutchess County

10. Fishkill
11. Beacon
12. Wappinger
13. Poughkeepsie
14. Hyde Park
15. Rhinebeck
16. Red Hook

Columbia County

17. Clermont
18. Germantown
19. Livingston
20. Greenport
21. Hudson
22. Stockport
23. Stuyvesant

24. New Baltimore Adjoins on other side of track

Albany County

25. Coeymans Adjoins on other side of track

26. Schodack

27. Bethel Adjoins on other side of track

28. East Greenbush

29. Rennselaer

30. Albany

31. Colonie

Schenectady County

32. Rotterdam

33. Schenectady

34. Glenville

Montgomery County

35. Amsterdam

36. Florida Adjoins on other side of track

37. Glen Adjoins on other side of track

38. Mohawk

39. Root Adjoins on other side of track

40. Canajoharie Adjoins on other side of track

41. Palatine

42. Minden Adjoins on other side of track

43. St Johnsville

Herkimer County

44. Danube Adjoins on other side of track

45. Manheim

46. Little Falls

47-48. Herkimer/German Flats German Flats adjoins on other side of track

49-50. Frankfort/Schuyler

Oneida County

51. Utica

South of Track

North of Track

52. Whitestown

53. Marcy Adjoins on other side of track

South of Track

North of Track

54. Rome

South of Track

North of Track

55. Verona

South of Track

North of Track

56. Westmoreland Adjoins on other side of track

Madison County

57. Oneida

South of track

North of Track

58. Lenox

South of track

North of Track

59. Sullivan

Onondaga County

60. Manlius

61. De Witt

62. Salina

63. Syracuse

64. Geddes

65. Camillus

66. Van Buren

67. Elbridge

Cayuga County

68. Brutus

69. Mentz

70. Montezuma

Wayne County

71. Savannah

72. Galen

73. Lyons

74. Arcadia

75. Palmyra

76. Macedon

Monroe County

- 77. Perinton
- 78. Pittsford
- 79. Brighton
- 80. Penfield
- 81. Rochester
- 82. Gates
- 83. Penfield
- 84. Riga
- 85. Chili
- 86. East Rochester

Genesee County

- 87. Bergen
- 88. Byron
- 89. Stafford
- 90. Batavia
- 91. Genesee (City)
- 92. Pembroke
- 93. Darien

Erie County

- 94. Alden
- 95. Lancaster
- 96. Cheektowaga
- 97. Buffalo
- 98. Tonawanda

Niagara County

- 99. North Tonawanda
- 100. Wheatfield
- 101. Niagara
- 102. Niagara Falls

Addie Kim

From: Addie Kim
Sent: Friday, April 23, 2021 1:36 PM
To: 'dec.sm.NaturalHeritage'
Cc: 'Jakubiak, Mark (DOT)'; Kenneth Wasserman; Joe Grilli; Marissa Seifert; Robert Conway
Subject: FW: Empire Corridor GIS request
Attachments: nynhp_docgis_11n.doc; HNTB-NYNHP.zip

Hi Nick,

Thanks for your response! I am forwarding the shapefiles that we had received previously from NYNHP (along with email correspondence received below). Please note that this NYNHP zipfile had to be renamed as "HNTB" to clear our email server. We will send a separate email with the shapefiles for Empire Corridor alternatives. We had originally requested buffers of ½ mile, although NYNHP screening distances for some species exceed these buffers (e.g., Indiana bat, Timber rattlesnake).

The Tier 1 Draft EIS evaluated a range of alternatives: the Base (No Build), 90 mph alternatives (Alternatives 90A and 90B), 110 mph alternative (Alternative 110), and 125 mph alternative (Alternatives 125). The routes for Alternatives 90A, 90B, and 110 all follow the existing Empire Corridor, and the 125 mph corridor followed a new alignment west of Schenectady to Buffalo, merging in with the existing alignment in the major cities of Rochester and Syracuse. South of Albany, all of the alternatives follow the existing Empire Corridor extending along the Hudson Line to New York City.

The Tier 1 Final EIS currently in preparation identifies one of the 90 mph alternatives (Alternative 90B) as the Preferred Alternative. This is the final route for the Tier 1 analysis and will follow the existing Empire Corridor. Although at this time we had proposed updating the analysis (that will be presented in an Appendix G) of all of the other alternatives. The design for the Preferred Alternative will be refined in the Tier 2 analysis.

The Preferred Alternative (Alternative 90B) follows the route for the existing Empire Corridor, shown in green below. Alternative 125 was dismissed based on substantially greater impacts and costs and follows a new alignment, allowing for higher speed rail operations. The 125 mph Alternative is shown below in red and obscures the existing Empire Corridor (and 90 mph alternative) where it follows this route south of Albany to New York City. The below maps of our online GIS mapping show the entire route (with 125 in red and 90 mph alternative in green) along with NYNHP data of rare species (plants and animals) and significant natural communities and there is a closeup view of this data for the areas surrounding Syracuse.

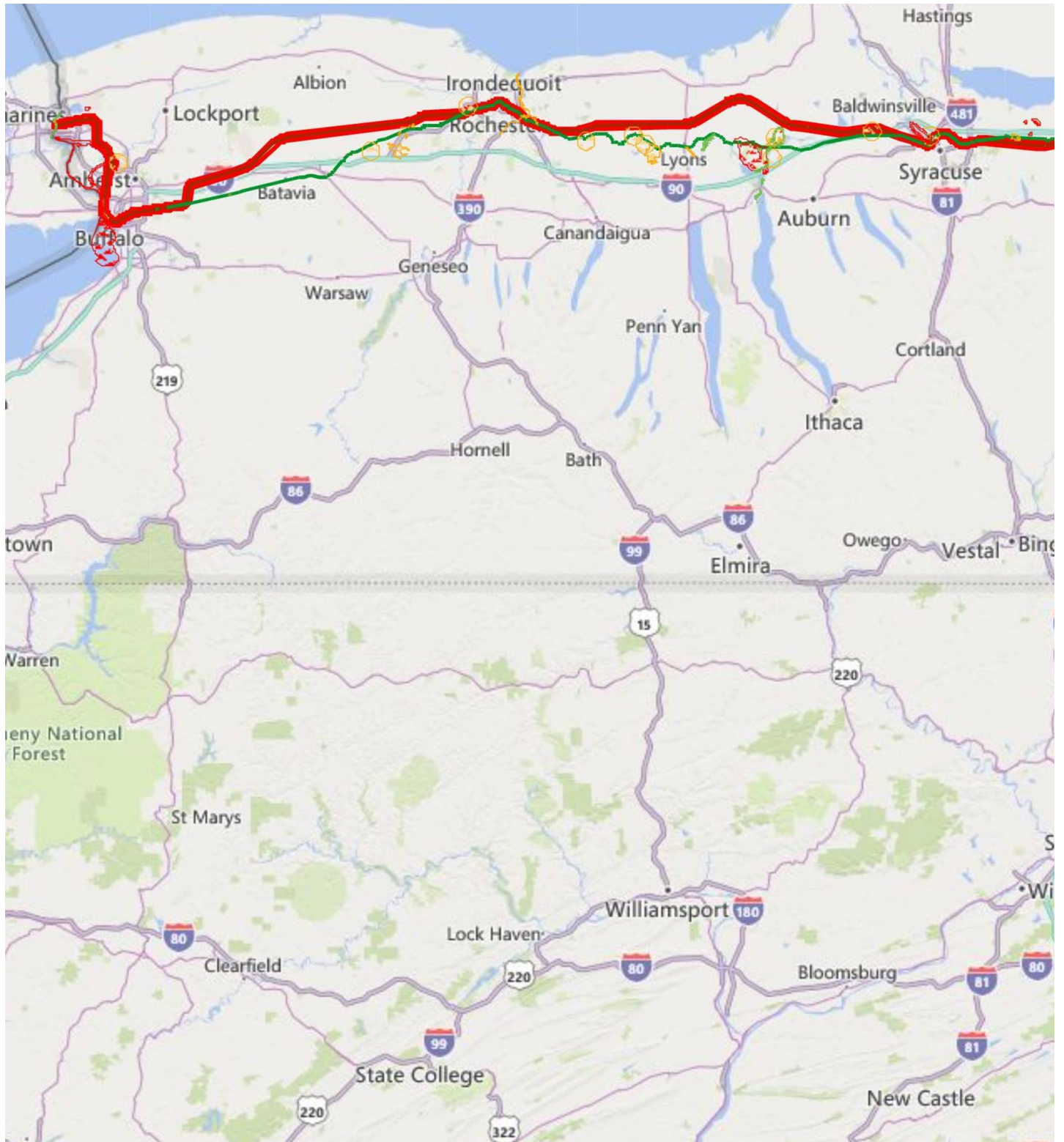
Sincerely,

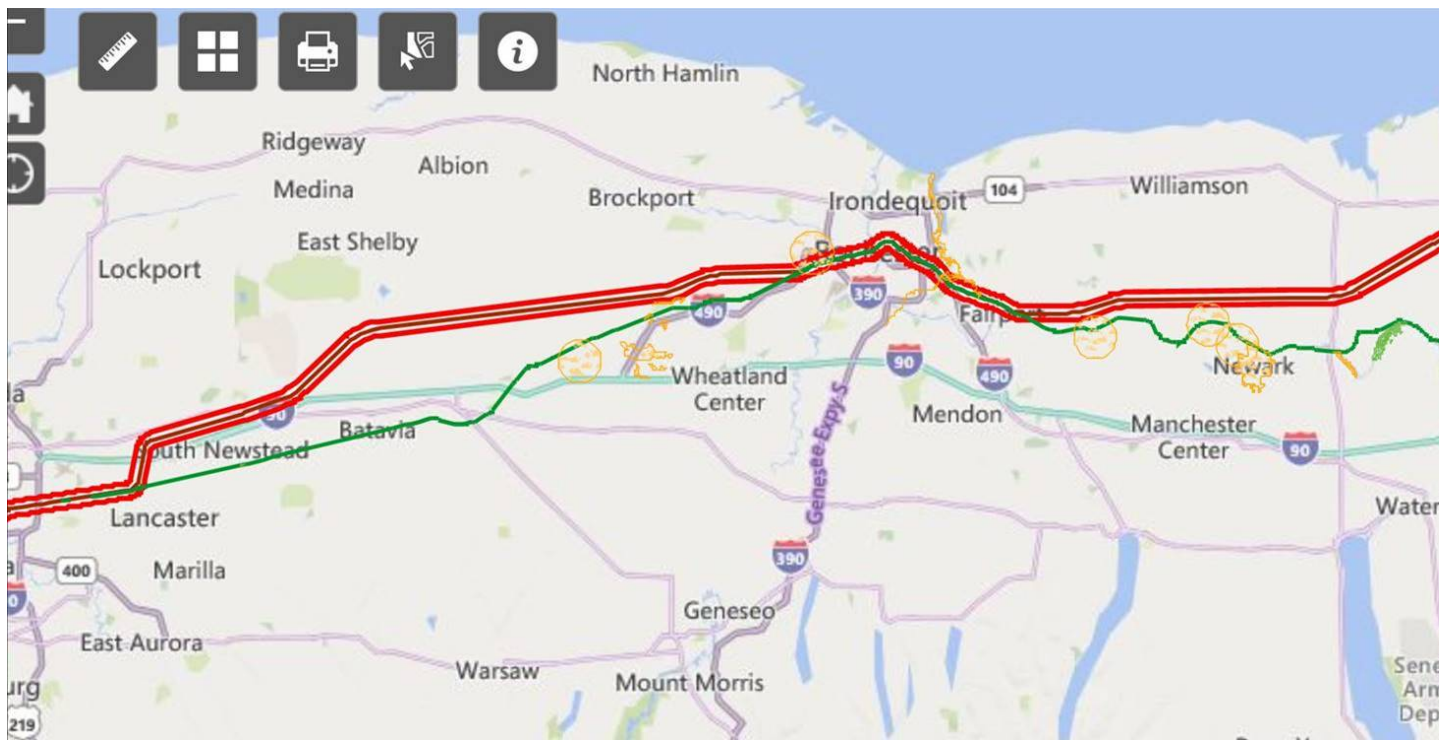
Addie

Addie Kim
Senior Environmental Planner

HNTB Corporation
31 St. James Avenue, Suite 300
Boston, MA 02116

Tel (617) 532-2326
Fax (617) 428-6905





From: Tara Salerno <tmsalern@gw.dec.state.ny.us>

Sent: Monday, March 7, 2011 11:27 AM

To: Karen Kays <Kays@pinyon-env.com>

Cc: DBargovic@chacompanies.com; Nick Conrad <nbconrad@gw.dec.state.ny.us>; Addie Kim <AKim@HNTB.com>

Subject: RE: Empire Corridor GIS request

Hi Karen,

Please find attached a zip file containing three shapefiles. The shapefiles contain locations of rare species and significant natural communities which are documented within 0.5 mile of the New York Power State Empire Corridor Project. In the shapefiles, each location is represented as a shape (one or more polygons). Some locations may have more than one overlapping shape, indicating more than one rare species or community occurs at that location. See the attached documentation, **nynhp_docgis_11n.doc**, for more details on interpreting these shapes and for definitions of the data fields.

The shapefiles are in meters, UTM zone 18, NAD 83.

The shapefile **nynhp_EmpireCorridor_species_11** contains records of rare plants and rare animals last documented since 1980, and for which relatively precise locations are known.

The shapefile **nynhp_EmpireCorridor_potential_11** contains records of rare plants and rare animals either last documented before 1980 (historical records), and/or records for which precise or relatively precise locations are not known. For historical records, there is no recent information and their current status is unknown. If appropriate habitat for these plants or animals is present, it is possible they may still be present.

The shapefile **nynhp_EmpireCorridor_comms_11** contains records of significant natural communities. Natural community occurrences in this shapefile are all ranked as being of excellent or good quality, and/or are considered significant from a statewide perspective. By meeting specific, documented criteria, the NY Natural Heritage Program considers these occurrences to have high ecological and conservation value.

Please note: In addition to the rare species provided in the shapefiles the following species have been documented within the given distances from the project site. These species are known to move the indicated distances and so potentially may be found near the project site at some time.

1. Indiana bats (*Myotis sodalis*) have been documented within 2 miles of the project site and occur in the following counties & towns:

Onondaga – Manlius

2. Timber rattlesnakes (*Crotalus horridus*) have been documented within 1.5 miles of the project site in the following counties & towns:

Putnam – Philipstown

For descriptions of each of the ecological community types, please go to <http://www.dec.ny.gov/animals/29384.html> and click on DRAFT Ecological Communities of New York State. More detailed information about many of the natural community types in New York, including identification, dominant and characteristic vegetation, distribution, conservation, and management, is available online in Natural Heritage's Conservation Guides at www.acris.nynhp.org.

More detailed information about many of the rare and listed animals and plants in New York, including biology, identification, habitat, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.acris.nynhp.org, from NatureServe Explorer at <http://www.natureserve.org/explorer>, from NYSDEC at <http://www.dec.ny.gov/animals/7494.html> (for animals), and from USDA's Plants Database at <http://plants.usda.gov/index.html> (for plants).

Please confirm that you have received the data and let me know if you have any questions.

Thanks,

Tara

Tara Salerno
Environmental Review Specialist
NY Natural Heritage Program
625 Broadway, 5th Floor
Albany, NY 12233-4757
Office: 518-402-8926
Fax: 518-402-8925
tmsalern@gw.dec.state.ny.us

>>> "Karen Kays" <Kays@pinyon-env.com> 3/7/2011 11:08 AM >>>

Hi Tara,

Attached is the data share agreement from HNTB and I sent you the one from Pinyon on Friday so, we should be all set. Please let me know if you require any further information. Thanks again for all of your assistance with this process.

Karen Carling Kays
Environmental Scientist

Pinyon Environmental, Inc.
376 Broadway, Suite 210
Saratoga Springs, NY 12866
518.583.8012 tel
518.691.8693 fax
518.222.6993 cell

Kays@pinyon-env.com

From: Tara Salerno [<mailto:tmsalern@gw.dec.state.ny.us>]
Sent: Tuesday, March 01, 2011 4:09 PM
To: Karen Kays
Cc: DBargovic@chacompanies.com; AKim@hntb.com
Subject: RE: Empire Corridor GIS request

Hi Karen,
I just wanted to let you know I received a signed data sharing agreement from CHA. As soon as I receive one from you and from HNTB I will send along the Heritage data.
Thanks,
Tara

Tara Salerno
Environmental Review Specialist
NY Natural Heritage Program
625 Broadway, 5th Floor
Albany, NY 12233-4757
Office: 518-402-8926
Fax: 518-402-8925

tmsalern@gw.dec.state.ny.us

>>> "Karen Kays" <kays@pinyon-env.com> 2/11/2011 10:33 AM >>>

Hi Tara,

Attached are the shape files of the corridor centerline and the ½ mile project area buffer. I'm copying Matt Santo on this email, he handles our GIS and can answer any questions that you might have. The data sharing agreement is to follow. Thanks!

Karen Carling Kays
Environmental Scientist

Pinyon Environmental, Inc.
376 Broadway, Suite 210
Saratoga Springs, NY 12866
518.583.8012 tel
518.691.8693 fax
518.222.6993 cell

Kays@pinyon-env.com

www.pinyon-env.com

Certified DBE in NY, CO, UT

From: Tara Salerno [<mailto:tmsalern@gw.dec.state.ny.us>]
Sent: Tuesday, February 08, 2011 2:24 PM
To: Karen Kays
Cc: Nick Conrad
Subject: RE: Empire Corridor GIS request

Hi Karen,
As discussed on the phone, as part of receiving data in digital format from the NY Natural Heritage Program, we ask that you also agree to and sign a data sharing agreement. A draft agreement is attached. If there are any provisions that raise concerns or questions for you, please let me know. If the provisions are acceptable, let me know that by e-mail, too, and return a signed copy to me in the mail or by e-mail (scanned in signed copy). Upon hearing that the

agreement is acceptable, we will prepare shapefiles of the locations of rare animals, rare plants, and significant natural communities which are documented in the NY Natural Heritage databases as occurring in the New York State Empire Corridor.

Let me know if you have any questions.

Thanks,
Tara

Tara Salerno
Environmental Review Specialist
NY Natural Heritage Program
625 Broadway, 5th Floor
Albany, NY 12233-4757
Office: 518-402-8926
Fax: 518-402-8925

tmsalern@gw.dec.state.ny.us

>>> "Karen Kays" <kays@pinyon-env.com> 2/8/2011 1:34 PM >>>

Hi Tara,

A few more questions.

1. Does your program handle the Hudson River Superfund Site? It appears from the NYSDEC website that it does but, I'm not 100% certain. I need to find hazardous waste information for the site..any ideas who to contact about that?
2. Also, I know you mentioned that you have record of significant natural communities but, to your knowledge, does the state have records of just plain natural communities? Thanks for your help.

Karen Carling Kays
Environmental Scientist

Pinyon Environmental, Inc.
376 Broadway, Suite 210
Saratoga Springs, NY 12866
518.583.8012 tel
518.691.8693 fax
518.222.6993 cell

Kays@pinyon-env.com

www.pinyon-env.com

Certified DBE in NY, CO, UT

From: Tara Salerno [<mailto:tmsalern@gw.dec.state.ny.us>]

Sent: Tuesday, February 08, 2011 11:10 AM

To: Karen Kays

Cc: Nick Conrad

Subject: Empire Corridor GIS request

Hi Karen,

The best thing to do is e-mail me a shapefile of your project area. Also, please give me a call at 518-402-8926 so we can discuss your project. Then I can discuss with my supervisor what is the best way to provide data to you.

Thanks.

Tara

Tara Salerno
Environmental Review Specialist
NY Natural Heritage Program
625 Broadway, 5th Floor
Albany, NY 12233-4757
Office: 518-402-8926
Fax: 518-402-8925
tmsalern@gw.dec.state.ny.us

>>> John Schmid 2/8/2011 6:59 AM >>>

Karen-

I am copying Nick Conrad (Information Resources Coordinator) on this reply. He should be able to assist you with your non-standard request.

-John

~~~~~

John J. Schmid, GISP  
GIS Specialist  
New York Natural Heritage Program  
625 Broadway, 5th Floor  
Albany, New York 12233-4757  
518.402.8930

~~~~~

>>> "Karen Kays" <Kays@pinyon-env.com> 2/7/2011 3:05 PM >>>

Hi John,

Pinyon Environmental, Inc. is working as part of the project team for the New York State Empire Corridor, Tier I EIS. We plan to submit a formal request for GIS information to your agency. However, I see on your website that certain items such as topo maps, counties and cities in the project boundary, etc. are to be included in the information request and that we should contact your agency for larger geographic area information requests. Our project area is a 463-mile long corridor. Could you provide me with information on how to proceed with our request? Thank you!

Karen Carling Kays
Environmental Scientist

Pinyon Environmental, Inc.
376 Broadway, Suite 210
Saratoga Springs, NY 12866
518.583.8012 tel
518.691.8693 fax
518.222.6993 cell

Kays@pinyon-env.com
www.pinyon-env.com
Certified DBE in NY, CO, UT

From: dec.sm.NaturalHeritage <NaturalHeritage@dec.ny.gov>
Sent: Thursday, April 22, 2021 5:44 PM
To: Addie Kim <AKim@HNTB.com>; Marissa Seifert <mseifert@HNTB.com>
Subject: RE: Info Request - New York State Empire Corridor Project

Hello, Marissa and Addie,

I have started digging into your request.

According to my records, it turns out we did process an original request in 2011, and I still have the shapefile for the route then. But then in 2012 Pinyon submitted a revised route; however, we were not contracted to conduct project screenings that year, and the 2012 request and shapefile went to NYSDEC, so I do not have a shapefile of the revised route. However, the map Addie provided in her recent email looks to be the original route. Please confirm which route you would like us to screen. If the revised route, could you please send a shapefile?

Yes, we did execute a data agreement with HNTB back in 2011. Since then, NYSDEC's legal department has directed us to use a new template for our data agreements (not surprisingly, it contains much more legalese than the old version). Once I'm clear on the route to screen, I would like to compare our current data with what was provided to you in 2011 and 2012. If there are only minor changes that I can convey to you in text, then we won't need a new data agreement. If the changes are substantial enough that you would need spatial data, then we would need to execute a new data agreement.

Will you want any other companies to have access to the data this time around?

Thanks,
Nick

Nicholas Conrad
Information Resources Coordinator
New York Natural Heritage Program
SUNY College of Environmental Science and Forestry
In partnership with NYS Department of Environmental Conservation
625 Broadway
Albany, NY 12233-4757
(518) 402-8944
Nick.Conrad@dec.ny.gov

From: Addie Kim <AKim@HNTB.com>
Sent: Monday, March 22, 2021 9:51 AM
To: Marissa Seifert <mseifert@HNTB.com>; dec.sm.NaturalHeritage <NaturalHeritage@dec.ny.gov>
Subject: RE: Info Request - New York State Empire Corridor Project

Hi,

Just wanted to follow up on this request for rare species and significant natural communities information for the High Speed Rail Empire Corridor (HSREC) Program. Attached for your review and information is the original (2011) data request with the general map attachment. The Federal Railroad Administration (FRA) and the New York State Department of Transportation (NYSDOT) published a Tier 1 Draft Environmental Impact Statement (EIS) in 2014. At that time, Pinyon Environmental was tasked with collecting and analyzing endangered species and ecology, and, on behalf of NYSDOT and HNTB, Pinyon initiated a data sharing agreement and collected NYSDEC GIS data on significant natural communities and endangered and threatened species. The original data request correspondence sent to NYSDEC is attached for your information. Please advise if you should need more detailed mapping of the corridor. The assessment for the Tier 1 EIS involved identification of resources within ½ mile of each of the prospective alternatives.

We are in the process of compiling the Tier 1 Final EIS on behalf of NYSDOT and FRA and would like to update the GIS NYSDEC rare species/significant natural communities data that was previously collected from your agency. Please

advise how we can obtain this GIS information directly from your agency, Marissa had forwarded the additional email correspondence and original data sharing agreement for the HSREC program with your agency.

Please feel free to call to discuss. Regards,

Addie

Addie Kim

Senior Environmental Planner

HNTB Corporation

31 St. James Avenue, Suite 300
Boston, MA 02116

Tel (617) 532-2326
Fax (617) 428-6905

From: Marissa Seifert <mseifert@HNTB.com>
Sent: Thursday, March 11, 2021 12:53 PM
To: NaturalHeritage@dec.ny.gov
Subject: Info Request - New York State Empire Corridor Project

To whom this may concern,

I am writing to request GIS information for the New York Empire Corridor Project, which is a 463-mile-long railroad corridor. The data will be used for a response to comments on the New York State Empire Corridor, Tier I EIS from FRA. Essentially, we would require updated information on rare animals, rare plants, and significant natural communities which are documented in the NY Natural Heritage database as occurring in the NY State Empire Corridor. Due to the size of the project, it may be easier to send a shapefile of the project area.

Our subcontractor, Pinyon Environmental, Inc., had previously signed a data share agreement in 2011 to allow access to this information (see attached correspondence). Therefore, please inform us if this is acceptable for us to have access to the information or the steps necessary for us to obtain the data.

Please let me know next steps.

Best,

Marissa Seifert

Wetland Scientist
Planning Department
Tel (617) 532-2220 Cell (413) 813-8453

HNTB CORPORATION

31 St. James St #300, Boston, MA 02116 | www.hntb.com

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3.2 Agency Information Responses

Index of Agency Information Responses

Ingmire, Scott, Director, Madison County Planning Department, “Empire Corridor EIS.” Email communication with Jeffrey O’Connell, HNTB Corporation, February 8, 2011.

McQueen, Joe, Director of Public Communications, Schenectady County, “Master Plan.” Email communication with Jeff O’Connell, HNTB Corporation, February 8, 2011.

Lilla, Sharon, Planning Director, Wayne County Planning, “Empire Corridor EIS.” Email communication with Jeff O’Donnell, HNTB Corporation, February 9, 2011.

Thapa, Jane, New York State Department of Health, Personal communication with Karen Kays, Pinyon Environmental, Inc., February 11, 2011.

Ozard, John, New York State Department of Environmental Conservation, Bureau of Wildlife, Wildlife Diversity Unit, “Request for Breeding Bird Atlas Data.” Email communication with Karen Kays, Pinyon Environmental, Inc., March 3, 2011.

Salerno, Tara, “Empire Corridor GIS Request.” Email communication with Karen Kays, Pinyon Environmental, Inc., March 7, 2011.

Hay, Duncan, National Park Service, Northeast Region, “NYS DOT & FRA Compliance (NEPA).” Email communication with Addie Kim, HNTB Corporation, March 25, 2011.

Colligan, Mary, Assistant Regional Administrator, Protected Resources Division, National Marine Fisheries Service, “High Speed Rail Empire Corridor Project (PIN S937.51.171).” Letter to Joseph Grilli, HNTB Corporation, March 30, 2011.

Jacobson, Roy, New York State Department of Environmental Conservation, Landscape Conservation Section, Bureau of Habitat, “Wild and Scenic Rivers.” Email communication with Karen Kays, Pinyon Environmental, Inc., April 9, 2011.

Doran, Sandra, U.S. Fish and Wildlife Service, New York Field Office, “High Speed Rail Empire Corridor Project, PIN S937.51.171.” Letter to Joseph Grilli, HNTB Corporation, April 19, 2011.

Rebecca, David, New York State Department of Environmental Conservation, “Empire Corridor High Speed Rail.” Email communication with Karen Kays, Pinyon Environmental, Inc., May 2, 2011.

Kassof, Gary, Bridge Program Manager, First Coast Guard District, “High Speed Rail Project (PIN S937.51.171).” Letter to Joseph G. Grilli, P.E., HNTB Corporation, July 7, 2011.

Chiarella, Lou, National Oceanic and Atmospheric Administration, “NOAA Fisheries Service Northeast Regional Office –Habitat Conservation Division – 978-281-9332.htm.” Email communication with Rosalie Wilson, Pinyon Environmental, Inc., October 18, 2011.

Labruzzo, Andy, New York State Department of State, Personal communication with Kevin Horgan, HNTB Corporation, January 4, 2012.

Conrad, Nicholas, Information Resources Coordinator, New York Natural Heritage Program, “RE: NYNHP Request,” Email communication with Addie Kim, HNTB Corporation, May 7, 2021.

U.S. Fish and Wildlife Service, “List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project (Consultation Code: 05E1NY00-2022-SLI-0765, Event Code: 05E1NY00-2022-E-02959, Project Name: Empire Corridor),” December 20, 2021.

Sarah Walker

From: scott.ingmire@co.madison.ny.us
Sent: Tuesday, February 08, 2011 5:59 PM
To: Jeffrey O'Connell
Subject: Re: Empire Corridor EIS

Thanks Jeff, I appreciate it.

Sent from my Verizon Wireless BlackBerry

From: Jeffrey O'Connell <jdoconnell@HNTB.com>
Date: Tue, 8 Feb 2011 15:16:51 -0600
To: 'Scott Ingmire' <scott.ingmire@co.madison.ny.us>
Subject: RE: Empire Corridor EIS

Scott,

Thanks for getting back to me. I would be happy to keep you apprised of the project. We are in the early planning stages so will keep you posted as things develop.

Thanks again!!

Best regards

Jeff

From: Scott Ingmire [<mailto:scott.ingmire@co.madison.ny.us>]
Sent: Tuesday, February 08, 2011 4:02 PM
To: Jeffrey O'Connell
Cc: Planning; Mark Scimone
Subject: RE: Empire Corridor EIS

Hello Jeff,

Though I've heard about the High Speed Rail project a bit in the press, to my knowledge there has been little discussion of it here in Madison County. I've attached our recently finalized Coordinated Transportation Plan, which primarily deals with rural public transit. I don't know that we made any mention of rail (high speed or otherwise) in the document, so it may not be of much use to you. We lie between Syracuse and Utica and I suspect we wouldn't be served by any rail stops here, though citizens could certainly access the service via terminals in those respective cities. I'd welcome the opportunity to learn more about the project and how we may be of assistance to you.

Scott

Scott Ingmire, Director
Madison County Planning Department

PO Box 606
Wampsville, NY 13163
Phone 315-366-2498
Fax 315-366-2742
Home E-mail = sgingmire@excite.com

From: Jeffrey O'Connell [\[mailto:jdoconnell@HNTB.com\]](mailto:jdoconnell@HNTB.com)
Sent: Tuesday, February 08, 2011 2:19 PM
To: Planning
Subject: Empire Corridor EIS

Scott,

I am working on the Empire Corridor EIS for Amtrak. I wanted to ask if you could provide the status of the County master plan and or transportation plan so I can determine if the county supports High Speed Rail service anticipated on the EC. Please call me if you have any questions.

Thanks

Jeff

Jeffrey D. OConnell, AICP

HNTB Corporation
31 St. James Avenue
Boston, MA 02116
(Main) 617-542-6900 x 52241
(Cell) 781-733-5571
jdoconnell@hntb.com

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Sarah Walker

From: John O'Connell
Sent: Tuesday, February 08, 2011 4:53 PM
To: Jeffrey O'Connell
Subject: FW: Master Plan

Meant for you , I believe ...

From: Joseph F. McQueen [\[mailto:joe.mcqueen@schenectadycounty.com\]](mailto:joe.mcqueen@schenectadycounty.com)
Sent: Tuesday, February 08, 2011 3:20 PM
To: John O'Connell
Subject: RE: Master Plan

Thank you for visiting the Schenectady County website. Schenectady County does not have an overall "Master Plan." There are master plans for specific projects being undertaken, but no written general plan. If you would like something more specific, please let me know.

Joe McQueen
Director of Public Communications
Schenectady County
(518) 388-4772
(518) 388-4591 (fax)



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From: No Reply
Sent: Tuesday, February 08, 2011 4:04 PM
To: feedback
Subject: Digimaker e-Form submission: Feedback

Sender Name : Jeff oConnell
Sender Email : joconnell@hntb.com
Subject : Master Plan for County

Feedback Type : Question

Message : Can you please sene me a copy of your County Master Plan or the link to it on the Web. My phone is 617-542-6900 x52241

Thanks

Jeff

Response Req : No

User: Guest (Id: 0)
Sent: 2/8/2011 4:04:28 PM
IP: 198.51.229.30
Domain: 198.51.229.30

Sarah Walker

From: PLAN- Lilla, Sharon <SLilla@co.wayne.ny.us>
Sent: Wednesday, February 09, 2011 10:52 AM
To: Jeffrey O'Connell
Subject: RE: Empire Corridor EIS

Dear Jeff,

Preparation of the Wayne County Master Plan was suspended several years ago. However, Wayne County does have a Strategic Plan for Economic Development. Just go to www.wedcny.org and click on the downloads link on the left hand side to find the plan.

For over 20 years, Wayne County has been trying to establish an Amtrak Station in the Village of Lyons. Nearly \$500,000 has been spent in the preparation of plans with the hope that we could construct a station to serve the Finger Lakes Region. We are situated on the longest stretch of rail in the Empire Corridor without a station (90 miles between Rochester and Syracuse). Given the amount of work we have done to advance this project, we would like to be considered as a viable stop along the Empire Corridor.

Sharon

Sharon Lilla
Planning Director
Wayne County Planning
9 Pearl St. Lyons NY 14489
Phone: 315.946.5919
Fax: 315.946.7657
SLilla@co.wayne.ny.us



Go Green! Print this email only when necessary. Thank you for helping the County of Wayne be environmentally responsible.

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From: Jeffrey O'Connell [\[mailto:jdoconnell@HNTB.com\]](mailto:jdoconnell@HNTB.com)
Sent: Tuesday, February 08, 2011 2:01 PM
To: PLAN- Lilla, Sharon
Subject: Empire Corridor EIS

Hi Sharon,

I spoke to your assistant today and asked about the status of the Wayne County Master Plan. I am identifying plans that will discuss High Speed Rail Service along the CSX line. Let me know if you can direct me to a website for this.

Thanks

Jeff

Jeffrey D. OConnell, AICP

HNTB Corporation
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Boston, MA 02116
(Main) 617-542-6900 x 52241
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RECORD OF TELEPHONE CALL

Job #	<u>61073501</u>	Date	<u>2/11/2011</u>
Call From	<u>Jane Thapa</u>	Of	<u>Pinyon Environmental, Inc</u>
Call To	<u>Karen Kays</u>	Of	<u>NYS Department of Health</u>
By	<u>Karen Kays</u>		(518)402-7751 – Jane Thapa's phone number

Subject Discussed

Jane returned a phone call from Karen (2/10/2011). Jane left a voicemail message stating that in order for us to obtain GIS information from the NYSDOH, (Karen originally requested well head protection data), that we should have David Chan send an email to Jane requesting the data. Jane will then send a Data Share form that should be signed by David and returned via email to Jane.

Action to be Taken

David Chan to email a data request to Jane Thapa at JCT02@health.state.ny.us.

Matt Santo

Subject: FW: Request for Breeding Bird Atlas Data

From: John Ozard [<mailto:jwozard@gw.dec.state.ny.us>]

Sent: Thursday, March 03, 2011 9:21 AM

To: Karen Kays

Subject: Re: Request for Breeding Bird Atlas Data

Karen,

The Breeding Bird Atlas data may be downloaded from our ftp site. This is a Microsoft Access version of the original and second Breeding Bird Atlas, plus there is an ESRI Arc shape file that can be used in a GIS to plot the locations of the survey blocks. Please see the Readme.txt file for further information.

<ftp://ftp.dec.state.ny.us/dfwmr/wildlife/bba/>

Sincerely,

John W. Ozard, Leader
Wildlife Diversity Unit
NYSDEC Bureau of Wildlife
625 Broadway
Albany, NY 12233-4754

518.402.8905

jwozard@gw.dec.state.ny.us

>>> "Karen Kays" <Kays@pinyon-env.com> 2/10/2011 12:02 PM >>>

Good Afternoon Mr. Ozard:

I spoke with Katherine Barns and she thought you may be able to help me with the below request.

The New York State Department of Transportation (NYSDOT), in cooperation with the Federal Railroad Administration (FRA), is beginning the environmental review process for the proposed New York State High Speed Rail Empire Corridor Project between Pennsylvania Station in New York City and Niagara Falls, New York. The corridor proceeds north from New York City through Albany and then turns west to Schenectady, passing through Syracuse, Rochester and Buffalo before terminating at Niagara Falls, a distance of 463 miles (Figure 1-attached).

A Tier 1 Environmental Impact Statement (EIS), in accordance with the National Environmental Policy Act (NEPA) of 1969 and the New York State Environmental Quality Review Act (SEQRA), is being completed to evaluate and document potential improvements and projects to intercity passenger rail service within the corridor. The projects identified in the Tier 1 EIS will be subject to detailed environmental review in Tier 2 project-level NEPA documents.

In order to complete the Tier 1 EIS, the project team will be reviewing available data. At this time, we respectfully request any Geographic Information System data regarding breeding birds along or within ½ mile of the 463 mile corridor (Figure 1-attached). While geographic information systems (GIS) data is preferred, any mappable data your office could provide would be greatly appreciated.

In addition, if it would be helpful, we can provide you with Shape files of the Project Centerline as well as the ½-mile buffer Project Area to overlay with your data.

If you have any questions, please feel free to contact me. Thank you.

Karen Carling Kays
Environmental Scientist

Pinyon Environmental, Inc.
376 Broadway, Suite 210
Saratoga Springs, NY 12866
518.583.8012 tel
518.691.8693 fax
518.222.6993 cell

Kays@pinyon-env.com
www.pinyon-env.com
Certified DBE in NY, CO, UT

Matt Santo

Subject: FW: Empire Corridor GIS request
Attachments: nynhp_docgis_11n.doc; nynhp_EmpireCorridor_11.zip

From: Tara Salerno [<mailto:tmsalern@gw.dec.state.ny.us>]
Sent: Monday, March 07, 2011 11:27 AM
To: Karen Kays
Cc: DBargovic@chacompanies.com; Nick Conrad; AKim@hntb.com
Subject: RE: Empire Corridor GIS request

Hi Karen,
Please find attached a zip file containing three shapefiles. The shapefiles contain locations of rare species and significant natural communities which are documented within 0.5 mile of the New York Power State Empire Corridor Project. In the shapefiles, each location is represented as a shape (one or more polygons). Some locations may have more than one overlapping shape, indicating more than one rare species or community occurs at that location. See the attached documentation, **nynhp_docgis_11n.doc**, for more details on interpreting these shapes and for definitions of the data fields.

The shapefiles are in meters, UTM zone 18, NAD 83.

The shapefile **nynhp_EmpireCorridor_species_11** contains records of rare plants and rare animals last documented since 1980, and for which relatively precise locations are known.

The shapefile **nynhp_EmpireCorridor_potential_11** contains records of rare plants and rare animals either last documented before 1980 (historical records), and/or records for which precise or relatively precise locations are not known. For historical records, there is no recent information and their current status is unknown. If appropriate habitat for these plants or animals is present, it is possible they may still be present.

The shapefile **nynhp_EmpireCorridor_comms_11** contains records of significant natural communities. Natural community occurrences in this shapefile are all ranked as being of excellent or good quality, and/or are considered significant from a statewide perspective. By meeting specific, documented criteria, the NY Natural Heritage Program considers these occurrences to have high ecological and conservation value.

Please note: In addition to the rare species provided in the shapefiles the following species have been documented within the given distances from the project site. These species are known to move the indicated distances and so potentially may be found near the project site at some time.

1. Indiana bats (*Myotis sodalis*) have been documented within 2 miles of the project site and occur in the following counties & towns:
Onondaga – Manlius
2. Timber rattlesnakes (*Crotalus horridus*) have been documented within 1.5 miles of the project site in the following counties & towns:
Putnam – Philipstown

For descriptions of each of the ecological community types, please go to <http://www.dec.ny.gov/animals/29384.html> and click on DRAFT Ecological Communities of New York State. More detailed information about many of the natural community types in New York, including identification, dominant and characteristic vegetation, distribution, conservation, and management, is available online in Natural Heritage's Conservation Guides at www.acris.nynhp.org.

More detailed information about many of the rare and listed animals and plants in New York, including biology, identification, habitat, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.acris.nynhp.org, from NatureServe Explorer at <http://www.natureserve.org/explorer>, from NYSDEC at

<http://www.dec.ny.gov/animals/7494.html> (for animals), and from USDA's Plants Database at <http://plants.usda.gov/index.html> (for plants).

Please confirm that you have received the data and let me know if you have any questions.

Thanks,

Tara

Tara Salerno
Environmental Review Specialist
NY Natural Heritage Program
625 Broadway, 5th Floor
Albany, NY 12233-4757
Office: 518-402-8926
Fax: 518-402-8925
tmsalern@gw.dec.state.ny.us

>>> "Karen Kays" <Kays@pinyon-env.com> 3/7/2011 11:08 AM >>>

Hi Tara,

Attached is the data share agreement from HNTB and I sent you the one from Pinyon on Friday so, we should be all set. Please let me know if you require any further information. Thanks again for all of your assistance with this process.

Karen Carling Kays
Environmental Scientist

Pinyon Environmental, Inc.
376 Broadway, Suite 210
Saratoga Springs, NY 12866
518.583.8012 tel
518.691.8693 fax
518.222.6993 cell

Kays@pinyon-env.com

www.pinyon-env.com

Certified DBE in NY, CO, UT

From: Tara Salerno [<mailto:tmsalern@gw.dec.state.ny.us>]
Sent: Tuesday, March 01, 2011 4:09 PM
To: Karen Kays
Cc: DBargovic@chacompanies.com; AKim@hntb.com
Subject: RE: Empire Corridor GIS request

Hi Karen,

I just wanted to let you know I received a signed data sharing agreement from CHA. As soon as I receive one from you and from HNTB I will send along the Heritage data.

Thanks,

Tara

Tara Salerno
Environmental Review Specialist

NY Natural Heritage Program
625 Broadway, 5th Floor
Albany, NY 12233-4757
Office: 518-402-8926
Fax: 518-402-8925
tmsalern@gw.dec.state.ny.us

>>> "Karen Kays" <kays@pinyon-env.com> 2/11/2011 10:33 AM >>>

Hi Tara,

Attached are the shape files of the corridor centerline and the ½ mile project area buffer. I'm copying Matt Santo on this email, he handles our GIS and can answer any questions that you might have. The data sharing agreement is to follow. Thanks!

Karen Carling Kays
Environmental Scientist

Pinyon Environmental, Inc.
376 Broadway, Suite 210
Saratoga Springs, NY 12866
518.583.8012 tel
518.691.8693 fax
518.222.6993 cell

Kays@pinyon-env.com
www.pinyon-env.com
Certified DBE in NY, CO, UT

From: Tara Salerno [<mailto:tmsalern@gw.dec.state.ny.us>]
Sent: Tuesday, February 08, 2011 2:24 PM
To: Karen Kays
Cc: Nick Conrad
Subject: RE: Empire Corridor GIS request

Hi Karen,

As discussed on the phone, as part of receiving data in digital format from the NY Natural Heritage Program, we ask that you also agree to and sign a data sharing agreement. A draft agreement is attached. If there are any provisions that raise concerns or questions for you, please let me know. If the provisions are acceptable, let me know that by e-mail, too, and return a signed copy to me in the mail or by e-mail (scanned in signed copy). Upon hearing that the agreement is acceptable, we will prepare shapefiles of the locations of rare animals, rare plants, and significant natural communities which are documented in the NY Natural Heritage databases as occurring in the New York State Empire Corridor.

Let me know if you have any questions.

Thanks,
Tara

Tara Salerno
Environmental Review Specialist
NY Natural Heritage Program
625 Broadway, 5th Floor
Albany, NY 12233-4757
Office: 518-402-8926
Fax: 518-402-8925
tmsalern@gw.dec.state.ny.us

>>> "Karen Kays" <kays@pinyon-env.com> 2/8/2011 1:34 PM >>>

Hi Tara,

A few more questions.

1. Does your program handle the Hudson River Superfund Site? It appears from the NYSDEC website that it does but, I'm not 100% certain. I need to find hazardous waste information for the site..any ideas who to contact about that?
2. Also, I know you mentioned that you have record of significant natural communities but, to your knowledge, does the state have records of just plain natural communities? Thanks for your help.

Karen Carling Kays
Environmental Scientist

Pinyon Environmental, Inc.
376 Broadway, Suite 210
Saratoga Springs, NY 12866
518.583.8012 tel
518.691.8693 fax
518.222.6993 cell

Kays@pinyon-env.com
www.pinyon-env.com
Certified DBE in NY, CO, UT

From: Tara Salerno [<mailto:tmsalern@gw.dec.state.ny.us>]
Sent: Tuesday, February 08, 2011 11:10 AM
To: Karen Kays
Cc: Nick Conrad
Subject: Empire Corridor GIS request

Hi Karen,
The best thing to do is e-mail me a shapefile of your project area. Also, please give me a call at 518-402-8926 so we can discuss your project. Then I can discuss with my supervisor what is the best way to provide data to you.
Thanks.
Tara

Tara Salerno
Environmental Review Specialist
NY Natural Heritage Program
625 Broadway, 5th Floor
Albany, NY 12233-4757
Office: 518-402-8926
Fax: 518-402-8925
tmsalern@gw.dec.state.ny.us

>>> John Schmid 2/8/2011 6:59 AM >>>

Karen-

I am copying Nick Conrad (Information Resources Coordinator) on this reply. He should be able to assist you with your non-standard request.

-John

~~~~~  
John J. Schmid, GISP  
GIS Specialist  
New York Natural Heritage Program

625 Broadway, 5th Floor  
Albany, New York 12233-4757  
518.402.8930

~~~~~

>>> "Karen Kays" <Kays@pinyon-env.com> 2/7/2011 3:05 PM >>>

Hi John,

Pinyon Environmental, Inc. is working as part of the project team for the New York State Empire Corridor, Tier I EIS. We plan to submit a formal request for GIS information to your agency. However, I see on your website that certain items such as topo maps, counties and cities in the project boundary, etc. are to be included in the information request and that we should contact your agency for larger geographic area information requests. Our project area is a 463-mile long corridor. Could you provide me with information on how to proceed with our request? Thank you!

Karen Carling Kays
Environmental Scientist

Pinyon Environmental, Inc.
376 Broadway, Suite 210
Saratoga Springs, NY 12866
518.583.8012 tel
518.691.8693 fax
518.222.6993 cell

Kays@pinyon-env.com
www.pinyon-env.com
Certified DBE in NY, CO, UT

Sarah Walker

From: Duncan_Hay@nps.gov
Sent: Friday, March 25, 2011 4:51 PM
To: Addie Kim
Cc: Nigel_Shaw@nps.gov
Subject: RE: NYS DOT & FRA compliance (NEPA)
Attachments: National Parks and Recreation Areas.doc; Corridor Map_July 28 2010 (2).pdf

Fort Stanwix National Monument, Rome (FOST), Oneida County, NY, 15.52 acres, is an NPS unit within 1,000' of the Rome Amtrak Station.

Theodore Roosevelt Inaugural NHS (THRI), Buffalo, Erie County, 1.03 acres, may be within 1,000' of the Niagara Falls spur (depending on which of the three active rail routes you use through Buffalo).

Montezuma NWR is more than 1,000' from the NY Central/Conrail/CSX ROW

Women's Rights NHS, Seneca Falls & Waterloo, Seneca County, NY is more than 1,000' away as is Martin Van Buren NHS, Kinderhook, Columbia County.

As you already know, your line runs through Roosevelt-Vanderbilt NHS at two locations in Hyde Park, Dutchess County.

You'll have to check the distances from your alignment to General Grant NM (Grant's Tomb), Hamilton Grange NM, and Theodore Roosevelt Birthplace NM, and Saint Pauls NHS in Mount Vernon which are all NPS units administered by Manhattan Sites. Other units of Manhattan Sites (Castle Clinton and Federal Hall are at the southern tip of the island, well outside the 1,000' zone.

You should also check with the Bureau of Indian Affairs (BIA). the Tuscarora Reservation, Niagara County; Tonawanda Seneca Reservation, Erie and Orleans Counties; Onondaga reservation, Onondaga County; and Oneida Reservation, Madison County are all outside the 1,000' zone but within 1-5 miles of the ROW. BIA recently designated trust land for the Seneca Nation of Indians (Cattaraugus) in the cities of Buffalo, Erie County and Niagara Falls, Niagara County and the Cayuga, Oneida, and Mohawk Nations have active land claims suits that include portions of your corridor. BIA's Eastern Regional Office is in Chattanooga, TN. I don't know anyone there anymore. My principal contact died last weekend, so you'll have to make a cold call.

We have GIS data for the Erie Canalway NHC boundary and are refining datalayers for the NYS Canal System as part of a National Register District nomination that we expect to complete by September. We got most everything else from the NYS GIS Clearinghouse.

NY-SHPO has been refining point and area data for NHL and National Register sites and districts. Their data is much more accurate than that from the NPS NHL and NR databases.

Duncan Hay
National Park Service, Northeast Region
Erie Canalway National Heritage Corridor
15 State Street

Boston, MA 02109-3572

TEL: 617-223-5056

FAX: 617-223-5164

Addie Kim

<AKim@HNTB.com>

To

03/25/2011 01:31 "Nigel_Shaw@nps.gov"

PM <Nigel_Shaw@nps.gov>

cc

"Deb_DiQuinzio@nps.gov"

<Deb_DiQuinzio@nps.gov>,

"duncan_hay@nps.gov"

<duncan_hay@nps.gov>,

"James_Farrell@nps.gov"

<James_Farrell@nps.gov>, Joe Grilli

<JGRILLI@HNTB.com>, 'Molly

McDonald' <MMcdonald@akrf.com>

Subject

RE: NYS DOT & FRA compliance (NEPA)

Hi Nigel,

Using existing web-based mapping, our study area for parklands and recreation areas is 1,000 feet on either side of the centerline of existing and proposed tracks (although GIS mapping will extend beyond this area for presentation graphics purposes, which is why we are seeking GIS for areas beyond this). The National parks, National Natural Landmarks, Natural Heritage Areas, and Natural Historic Sites that we have identified within 1,000 feet of the project centerline are described below and in the attached write-up (note this list does not include National Historic Landmarks being addressed as part of Cultural Resource Investigations):

- o Hudson River Valley National Heritage Area
- o Erie Canalway National Heritage Area
- o Niagara Falls National Heritage Area, including the community of Niagara Falls at the western end of the Niagara Branch railroad.

Name-County Acreage within 2,000-foot-wide
study area

Vanderbilt Mansion National Historic Site-Dutchess

Federal Land within Hudson Highlands State Park -Putnam

0.4

Moss Island National Natural Landmark-Herkimer

15

Montezuma National Wildlife Refuge-Wayne

557

If we have missed something within the 2,000-foot wide study area centered on the railroad, please advise. We are interested in GIS mapping for the broader area for mapping/graphics presentation purposes.

Best regards,

Addie

From: Nigel_Shaw@nps.gov [Nigel_Shaw@nps.gov]

Sent: Friday, March 25, 2011 12:52 PM

To: Addie Kim

Cc: Deb_DiQuinzio@nps.gov; 'duncan_hay@nps.gov'; James_Farrell@nps.gov; Joe Grilli; 'Molly McDonald'

Subject: NYS DOT & FRA compliance (NEPA)

Hi Addie,

This could concern quite a few National Parks and affiliated areas and I cannot say which are really within 1/2 mile of the corridor. Is it safe to assume that this is also equal to 1/2 mile from the railroad tracks? I think it will be best on our end to have someone in the NPS Planning & Compliance Division determine whether the given park is w/in the area of interest as defined in your official request so I will forward this along to Terry Moore, Chief of P&C, for his consideration. Please let me know if you do not hear from someone else regarding this within your timeframe and I will follow up if necessary.

best wishes,

Nigel

National Parks of New York Harbor (Manhattan Sites) Home of FDR / Eleanor Roosevelt NHS / Vanderbilt Mansion
Martin Van Buren NHS Fort Stanwix NHS Women's Rights NHP Susan B. Anthony NHS Thomas Cole NHS Hudson River
Valley NRA Kate Mullany NHS Erie Canalway NHC Theodore Roosevelt Inaugural NHS Niagara Falls NHA

~~~~~

Nigel Shaw

GIS Coordinator, Northeast Region

National Park Service

office (617) 223-5065

cell (617) 797-4569

fax (617) 223-5097

Addie Kim

<AKim@HNTB.com>

To  
03/24/2011 01:05 PM      "'Nigel\_Shaw@nps.gov"'  
<Nigel\_Shaw@nps.gov>,  
"Deb\_DiQuinzio@nps.gov"  
<Deb\_DiQuinzio@nps.gov>,  
"'duncan\_hay@nps.gov"'  
<duncan\_hay@nps.gov>  
cc  
"James\_Farrell@nps.gov"  
<James\_Farrell@nps.gov>, Joe Grilli  
<JGRILLI@HNTB.com>, 'Molly  
McDonald' <MMcdonald@akrf.com>, Joe  
Grilli <JGRILLI@HNTB.com>  
Subject  
RE: Fw: requested info re Hart's  
Woods NNL

Greatly appreciate your assistance in this matter. Yes, the Empire Corridor extends 463 miles from New York City north to Albany, then west to Buffalo and Niagara Falls. Please refer to formal information request below and attached map:

---

Dear Sir/Madam:

The New York State Department of Transportation (NYSDOT), in cooperation with the Federal Railroad Administration (FRA), is beginning the environmental review process for the proposed New York State High Speed Rail Empire Corridor Project between Pennsylvania Station in New York City and Niagara Falls, New York. The corridor proceeds north from New York City through Albany and then turns west to Schenectady, passing through Syracuse, Rochester and Buffalo before terminating at Niagara Falls, a distance of 463 miles (Figure 1).

A Tier 1 Environmental Impact Statement (EIS), in accordance with the National Environmental Policy Act (NEPA) of 1969 and the New York State Environmental Quality Review Act (SEQRA), is being completed to evaluate and document potential improvements and projects to intercity passenger rail service within the corridor. The projects identified in the Tier 1 EIS will be subject to detailed environmental review in Tier 2 project-level NEPA documents.

In order to complete the Tier 1 EIS, the project team will be reviewing available data. At this time, we respectfully request any Geographic Information System data regarding national heritage areas, parks, and national historic sites (and National Historic Landmarks) along or within ½ mile of the 463 mile corridor (Figure 1). Any information on sites that have received Land and Water Conservation Funding would be of interest.

While geographic information systems (GIS) data is preferred, any mappable data your office could provide would be greatly appreciated.

If you have any questions, please feel free to contact me.

Best regards,

Addie

Addie Kim  
Senior Environmental Planner  
HNTB Corporation  
31 St. James Avenue, Suite 300  
Boston, MA 02116  
Tel (617) 532-2326  
Fax (617) 428-6905

-----Original Message-----

From: Nigel\_Shaw@nps.gov [mailto:Nigel\_Shaw@nps.gov]  
Sent: Thursday, March 24, 2011 12:50 PM  
To: Deb\_DiQuinzio@nps.gov  
Cc: Addie Kim; James\_Farrell@nps.gov  
Subject: Re: Fw: requested info re Hart's Woods NNL

Hi Deb,

The Empire Corridor sounds like it is in NY state (and Wikipedia confirms). Duncan Hay manages the mapping for the Erie Canal National Heritage Corridor, which appears to be roughly coincident with much of the e-w stretch of the Empire Corridor. Duncan can be reached via email: Duncan\_Hay@nps.gov or by phone at (617) 223-5056.  
Nigel

~~~~~

Nigel Shaw
GIS Coordinator, Northeast Region
National Park Service
office (617) 223-5065
cell (617) 797-4569
fax (617) 223-5097

Deb	
DiQuinzio/Boston/	
NPS	To
	James Farrell/PHILADELPHIA/NPS@NPS,
03/24/2011 11:56 AM	Nigel Shaw/Boston/NPS@NPS
	cc
	AKim@HNTB.com
	Subject
	Fw: requested info re Hart's Woods
	NNL

Hi James and Nigel,

Could one of you direct Addie to where she may obtain GIS data for other NPS interests within the Empire Corridor project area in NY?

Thanks,

Deb DiQuinzio
National Natural Landmarks Program
NPS Northeast Region
(617) 223-5064
<http://www.nature.nps.gov/nnl>

----- Forwarded by Deb DiQuinzio/Boston/NPS on 03/24/2011 11:53 AM -----

Addie Kim
<AKim@HNTB.com>

To

03/10/2011 01:31 PM "'Deb_DiQuinzio@nps.gov'"
 <Deb_DiQuinzio@nps.gov>

cc

Joe Grilli <JGRILLI@HNTB.com>,
Kathleen Roy <kroy@HNTB.com>

Subject

RE: requested info re Hart's Woods
NNL

Thanks Deb!

The other site of particular interest is Moss Island. Other that may be in our vicinity (but difficult to confirm) are Bergen-Byron Swamp, Zurich Bog, Round Lake, and Montezuma Marshes.

If you could please provide a National Park Service GIS contact that we could obtain other NPS mapping from, it would be much appreciated.

Thanks very much!

Addie

Addie Kim
Senior Environmental Planner

HNTB Corporation
31 St. James Avenue, Suite 300
Boston, MA 02116

Tel (617) 532-2326
Fax (617) 428-6905

-----Original Message-----

From: Deb_DiQuinzio@nps.gov [mailto:Deb_DiQuinzio@nps.gov]
Sent: Thursday, March 10, 2011 1:23 PM
To: Addie Kim
Subject: requested info re Hart's Woods NNL

Hello Addie,

Here is the jpg boundary map for Hart's Woods, and also the one-page brief that describes the site's significance. If you require this type of info for any other specific NNL sites, please let me know. More soon...

(See attached file: Hart's Woods.doc)(See attached file: harts woods.jpg)

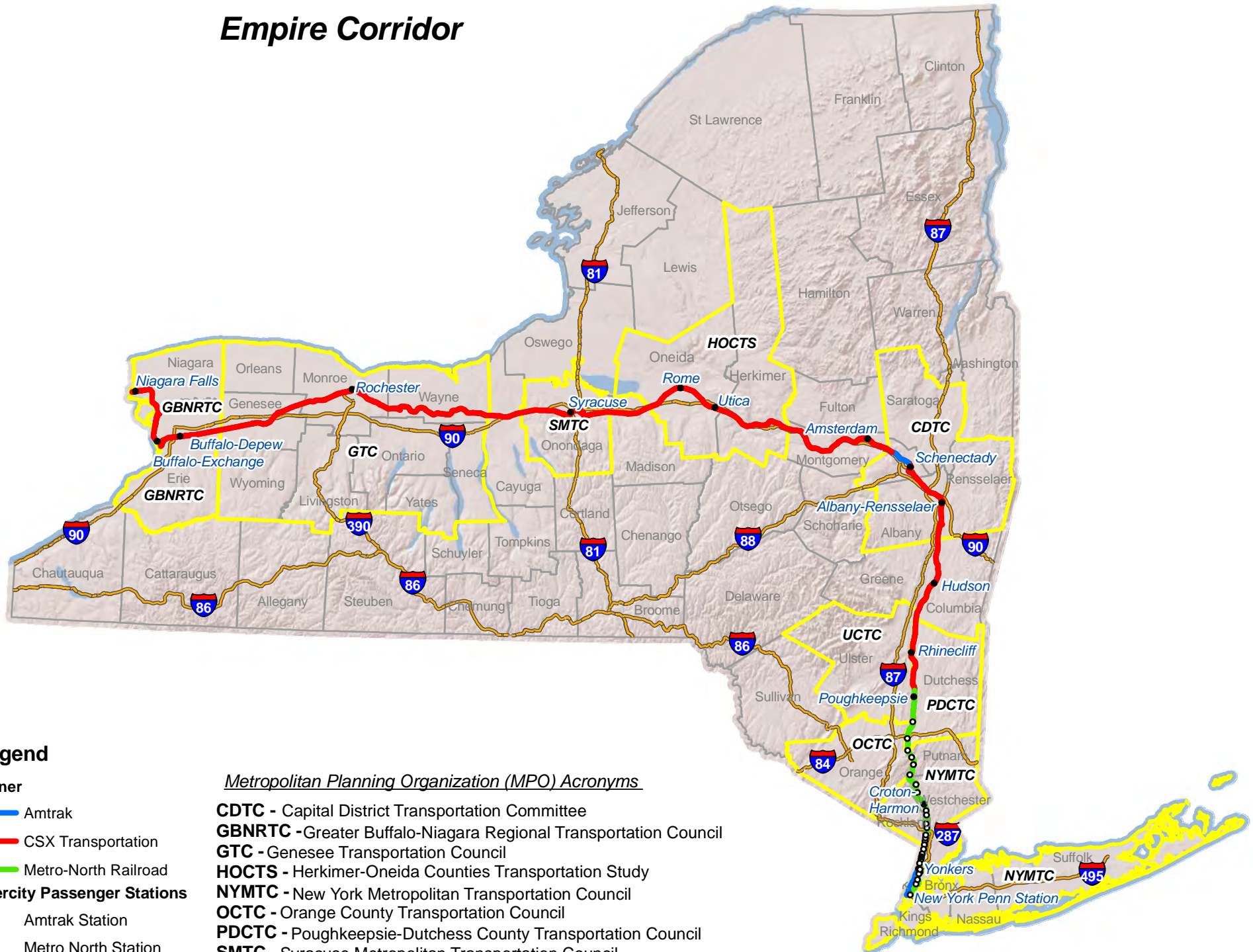
Deb DiQuinzio
National Natural Landmarks Program
NPS Northeast Region
(617) 223-5064
<http://www.nature.nps.gov/nnl>

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If you are NOT the intended recipient or the person responsible for delivering the e-mail to the intended recipient, be advised that you have received this e-mail in error and that any use, dissemination, forwarding, printing or copying this e-mail is strictly prohibited.

[attachment "Corridor Map_July 28 2010 (2).pdf" deleted by Nigel Shaw/Boston/NPS] (See attached file: National Parks and Recreation Areas.doc)(See attached file: Corridor Map_July 28 2010 (2).pdf)

Empire Corridor



a. National Parks and Recreation Areas

There are several types of federally designated parks or recreation areas, including National Heritage Areas, National Natural Landmarks, National Wildlife Refuges, and National Historic Sites. National Historic Landmarks and National Register Historic Districts in the project area are addressed under **Section ***.

- **National Heritage Areas:** Congress established National Heritage Areas to promote historic preservation and an appreciation of the history and heritage of the designated site. National Heritage Areas are not federally owned or managed, but are administered by state or local governments or non-profit or private corporations, with the National Park Service providing an advisory role. The Empire Corridor traverses through three National Heritage Areas:
 - **Hudson River Valley National Heritage Area:** The Hudson River Valley National Heritage Area was designated by Congress in 1996 and extends from New York City north to Albany, along the Empire Corridor South. The heritage of the region dates back to the Revolutionary War, with several National Historic Landmarks and historic districts, estates of well-known historical figures, scenic parks, and gardens.
 - **Erie Canalway National Heritage Area:** The Erie Canalway National Heritage Area includes the Erie Canal system (Erie, Champlain, Oswego, and Cayuga-Seneca Canals) that extends through upstate New York, along most of the central and eastern portions of the Empire Corridor West. The New York State Canal System is the most commercially enduring and historically significant canal way in the United States. This waterway played a key role in turning New York City into our country's most important center for commerce, industry, and finance.
 - **Niagara Falls National Heritage Area:** Designated by Congress in 2008, the Niagara Falls National Heritage Area stretches from the western boundary of Wheatfield, New York to the mouth of the Niagara River on Lake Ontario, including the community of Niagara Falls at the western end of the Niagara Branch. The region is home to natural wonders, rich cultural traditions, and nationally significant historical sites.
- **National Natural Landmark:** The National Registry of Natural Landmarks includes nationally significant geological and biological features. Only one-half of the National Natural Landmarks are administered solely by public agencies, and nearly one-third are owned entirely by private parties. Because many natural landmarks are privately owned and/or not managed for public access, owner permission must be obtained prior to visitation. Designation in no way infers any right of public access.

The only site within 1,000 feet of the project corridor is **Moss Island**, near Milepost 216 and Lock 17 on the Erie Canal in Little Falls, Herkimer County. Moss Island is part of an uplifted fault block of ancient crystalline rock. It contains the best exposure of glacial age potholes eroded by meltwater floods in the eastern United States. It was designated in 1976 and is owned by the state.

- **National Wildlife Refuge:** The National Wildlife Refuge System, managed by the U.S. Fish and Wildlife Service, is the nation's system of public lands and waters set aside to conserve fish, wildlife and plants. Recreational wildlife-dependent uses permitted on some refuges include hunting and fishing, wildlife observation, photography, environmental education, and interpretation.

The only national wildlife refuge within 1,000 feet of the project corridor is the **Montezuma National Wildlife Refuge** (at Mileposts 323 to 326) in Wayne County. The area known as the Montezuma Marshes once drew thousands of waterfowl making their annual fall migration. In 1938, the Montezuma NWR was formed to restore the wetland habitat with impoundments created by development of the Erie Canal, smaller feeder canals, and agricultural development. Today, the refuge consists of 10,000 acres, and accommodates recreational uses, including hunting that is restricted (on designated days only upon reservation to a limited number of individuals and groups).

- **National Historic Sites:** Two National Historic Sites along the banks of the Hudson River in Hyde Park, Dutchess County are within the 1,000 foot buffer area. These sites are open to the public and are nationally important recreational tourism destinations:
 - **Vanderbilt Mansion National Historic Site:** The 50-room Classical-style mansion on 211 acres (near Milepost 80) was built in 1898. It was constructed by Frederick William Vanderbilt, a grandson of “Commodore” Cornelius Vanderbilt - the shipping and railroad magnate and richest man in America during his lifetime. Landscaped grounds feature a formal terraced garden, expansive lawns, carriage roads, and a three-mile-long riverside hiking trail.
 - **Home of Franklin D. Roosevelt National Historic Site:** This site covering more than 740 acres (at Mileposts 77-78) was the birthplace, lifelong home, and burial place of Franklin Delano Roosevelt, America’s 32nd President. It was purchased by Roosevelt’s father in 1867, and, by 1915, Franklin and his mother, Sara, had undertaken extensive renovations that included the addition of two large wings. The grounds that feature flower gardens, outbuildings, and miles of walking trails. The Rose Garden contains the graves of Franklin and Eleanor Roosevelt.

Table 1 summarizes the publicly owned acreage within National Historic Sites, National Wildlife Refuge, and federal preserves within 1,000 feet of the project centerline.

Table 1—National Natural Landmark, Historic Sites, Wildlife Refuge, and Preserve within Study Area

Name	County	Acreage within 2,000-foot-wide study area	Potential Section 4(f)
Vanderbilt Mansion National Historic Site	Dutchess	143	x
Franklin D Roosevelt Home National Historic Site	Dutchess	82	x
Federal Land within Hudson Highlands State Park	Putnam	0.4	x
Moss Island National Natural Landmark	Herkimer	15	x
Montezuma National Wildlife Refuge	Wayne	557	x

Source: National Park Service, New York State GIS Clearinghouse

JGG → file 50311
cc. D. Chan, NYSDOT
A. Kim, HNTB
S. Epstein, Pinyon



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
NORTHEAST REGION
55 Great Republic Drive
Gloucester, MA 01930-2276

Joseph G. Grilli
HNTB Corporation
31 St. James Avenue, Suite 300
Boston, Massachusetts 02116

MAR 30 2011

HNTB - Boston

MAR 31 2011

RE: High Speed Rail Empire Corridor Project (PIN S937.51.171)

Dear Mr. Grilli,

This is in response to your letter dated March 18, 2011 regarding the proposed New York State High Speed Rail Empire Corridor Project. The project is proposed by the New York State Department of Transportation (NYSDOT) in cooperation with the Federal Railroad Administration (FRA). The rail corridor proceeds north from New York City through Albany and then turns west to Schenectady, passing through Syracuse, Rochester and Buffalo before terminating at Niagara Falls. Your letter requests information on the presence of federally listed threatened or endangered species in the vicinity of the proposed project, specifically within major streams and rivers located within 300 feet of the track centerline as listed in Appendix A of your letter.

A population of endangered shortnose sturgeon (*Acipenser brevirostrum*) occurs in the Hudson River below the Troy Dam. No shortnose sturgeon are known to occur in any of the waterbodies listed in Attachment A of your letter. Similarly, the New York Bight Distinct Population Segment (DPS) of Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*), which was proposed for listing as threatened by NMFS in October 2010, occurs in the Hudson River. However, Atlantic sturgeon are not known to occur in any of the waterbodies listed in Attachment A of your letter. As no listed or proposed species or critical habitat occur in the action area, no further coordination with NMFS on the effects of the proposed action is necessary. Should you have any questions regarding these comments, please contact Julie Crocker at (978)282-8480.

Sincerely,

Mary A. Colligan
Assistant Regional Administrator
for Protected Resources



Matt Santo

Subject: FW: FW: Wild and Scenic Rivers
Attachments: WSRR - NY.zip

From: Roy Jacobson [<mailto:rajacobs@gw.dec.state.ny.us>]
Sent: Tuesday, April 19, 2011 3:27 PM
To: Karen Kays
Subject: Re: FW: Wild and Scenic Rivers

Karen,

I'm sorry for not getting back to you sooner. I have many explanations, but no excuses.

Here is a shape file that has all the WSRR sections (NYS designations and federal designations). NY state regulates a corridor surrounding the rivers that can be as much as a 1/2 on either side of the river. However, as you will see, there is nothing even close to the high speed rail corridor you sent me. Call me if you have any questions.

Thanks for your patience and for the friendly reminder.
JR

Roy "JR" Jacobson
NYS Department of Environmental Conservation
Landscape Conservation Section
Bureau of Habitat
625 Broadway
Albany, NY 12233-4756
(518) 402-8853
rajacobs@gw.dec.state.ny.us

>>> "Karen Kays" <kays@pinyon-env.com> 4/19/2011 10:46 AM >>>

Hi JR,

I just wanted to follow-up on the below request. Please let me know if there is any further information that you need for me or if there is another process that I should be going to in order to request this data. Thank you!

Karen Carling Kays
Environmental Scientist

Pinyon Environmental, Inc.
376 Broadway, Suite 210
Saratoga Springs, NY 12866
518.583.8012 tel
518.691.8693 fax
518.222.6993 cell

Kays@pinyon-env.com
www.pinyon-env.com
Certified DBE in NY, CO, UT

From: Karen Kays [<mailto:kays@pinyon-env.com>]
Sent: Friday, February 11, 2011 11:39 AM

To: 'Roy Jacobson'
Cc: Matt Santo
Subject: RE: Wild and Scenic Rivers

Hi JR,

The Shape files of the project centerline and 300 foot buffer are attached. Matt Santo handles our GIS data, he is copied on this email, in case you have any questions.

A formal request letter will be mailed to your attention but, in the meantime, the text is included below:

DATA REQUEST and PROJECT INFORMATION:

The New York State Department of Transportation (NYSDOT), in cooperation with the Federal Railroad Administration (FRA), is beginning the environmental review process for the proposed New York State High Speed Rail Empire Corridor Project between Pennsylvania Station in New York City and Niagara Falls, New York. The corridor proceeds north from New York City through Albany and then turns west to Schenectady, passing through Syracuse, Rochester and Buffalo before terminating at Niagara Falls, a distance of 463 miles (Figure 1-attached).

A Tier 1 Environmental Impact Statement (EIS), in accordance with the National Environmental Policy Act (NEPA) of 1969 and the New York State Environmental Quality Review Act (SEQRA), is being completed to evaluate and document potential improvements and projects to intercity passenger rail service within the corridor. The projects identified in the Tier 1 EIS will be subject to detailed environmental review in Tier 2 project-level NEPA documents.

In order to complete the Tier 1 EIS, the project team will be reviewing available data. At this time, we respectfully request any Geographic Information System data regarding state wild and scenic rivers along or within a 300 feet of the 463 mile corridor (Figure 1 - attached). While geographic information systems (GIS) data is preferred, any mappable data your office could provide would be greatly appreciated.

If you have any questions, please feel free to contact me. Thank you.

Karen Carling Kays
Environmental Scientist

Pinyon Environmental, Inc.
376 Broadway, Suite 210
Saratoga Springs, NY 12866
518.583.8012 tel
518.691.8693 fax
518.222.6993 cell

Kays@pinyon-env.com
www.pinyon-env.com
Certified DBE in NY, CO, UT

From: Roy Jacobson [<mailto:rajacobs@gw.dec.state.ny.us>]
Sent: Thursday, February 10, 2011 12:10 PM
To: Karen Kays
Subject: RE: Wild and Scenic Rivers

Karen,

OK. Please send the shapefiles with your request. Thanks.

JR

>>> "Karen Kays" <kays@pinyon-env.com> 2/10/2011 11:46 AM >>>

Hi JR,

Thank you for the response and information. I am including some further information about the project below. I spoke with Katherine Barns this morning and she mentioned that you may be able to provide me with information on State Wild and Scenic Rivers along or within a ½ mile of the 463 mile corridor (Figure 1 - attached). If necessary, we can provide you with Shape files of the Project Centerline as well as the ½-mile buffer Study Area to overlay with your data.

Please note, we will be also be sending you a formal letter request.

The New York State Department of Transportation (NYSDOT), in cooperation with the Federal Railroad Administration (FRA), is beginning the environmental review process for the proposed New York State High Speed Rail Empire Corridor Project between Pennsylvania Station in New York City and Niagara Falls, New York. The corridor proceeds north from New York City through Albany and then turns west to Schenectady, passing through Syracuse, Rochester and Buffalo before terminating at Niagara Falls, a distance of 463 miles (Figure 1-attached).

A Tier 1 Environmental Impact Statement (EIS), in accordance with the National Environmental Policy Act (NEPA) of 1969 and the New York State Environmental Quality Review Act (SEQRA), is being completed to evaluate and document potential improvements and projects to intercity passenger rail service within the corridor. The projects identified in the Tier 1 EIS will be subject to detailed environmental review in Tier 2 project-level NEPA documents.

In order to complete the Tier 1 EIS, the project team will be reviewing available data. At this time, we respectfully request any Geographic Information System data regarding state wild and scenic rivers along or within ½ mile of the 463 mile corridor (Figure 1 - attached). While geographic information systems (GIS) data is preferred, any mappable data your office could provide would be greatly appreciated.

If you have any questions, please feel free to contact me. Thank you.

Karen Carling Kays
Environmental Scientist

Pinyon Environmental, Inc.
376 Broadway, Suite 210
Saratoga Springs, NY 12866
518.583.8012 tel
518.691.8693 fax
518.222.6993 cell

[Kays@pinyon-env.com](mailto:kays@pinyon-env.com)
www.pinyon-env.com
Certified DBE in NY, CO, UT

From: Roy Jacobson [<mailto:rajacobs@gw.dec.state.ny.us>]
Sent: Wednesday, February 09, 2011 9:23 AM
To: Karen Kays
Cc: Judy Stevens
Subject: Fwd: Hudson River Superfund Site Question

Karen,

I got your phone message yesterday and I'm glad that you talked with Tara about information on rare things. If you want GIS information on state regulated freshwater wetlands you can find that at:

<http://cugir.mannlib.cornell.edu/>

Please contact Judy Stevens, our freshwater wetlands mapping coordinator, if you have questions on the freshwater wetlands maps (I've copied her on this e-mail). Also, you can find other information at DEC's Environmental Resource Mapper

<http://www.dec.ny.gov/imsmaps/ERM/viewer.htm>

Good luck.

JR

Roy "JR" Jacobson
NYS Department of Environmental Conservation
Landscape Conservation Section
Bureau of Habitat
625 Broadway
Albany, NY 12233-4756
(518) 402-8853
rajacobs@gw.dec.state.ny.us

>>> "Karen Kays" <Kays@pinyon-env.com> 2/8/2011 3:34 PM >>>

Hi Steve,

Tara Salerno from the Natural Heritage Program gave me your contact information and thought you might be able to help me. Pinyon is part of the project team assisting NYSDOT and FRA with the High Speed Rail Empire Corridor Tier I EIS project. Currently, we are assembling data for the 463-mile corridor. Are you the right person to contact regarding hazardous materials/substance data related to the Hudson River Superfund Site. At this point we are looking for GIS data so that we can conduct a review of existing conditions within the project buffer area. If you are not the correct person to contact regarding the process to request data, could you point me in the right direction? Thanks in advance for your help.

Karen Carling Kays
Environmental Scientist

Pinyon Environmental, Inc.
376 Broadway, Suite 210
Saratoga Springs, NY 12866
518.583.8012 tel
518.691.8693 fax
518.222.6993 cell

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Certified DBE in NY, CO, UT

APR 20 2011



United States Department of the Interior

FISH AND WILDLIFE SERVICE

New York Field Office

3817 Luker Road

Cortland, NY 13045

Phone: (607) 753-9334 Fax: (607) 753-9699

<http://www.fws.gov/northeast/nyfo>

Project Number: 90646

To: Joseph Grilli

Date: Apr 19, 2011

Regarding: High Speed Rail Empire Corridor Project, PIN S937.51.171

Town/County: from Pennsylvania Station in New York City to Niagara Falls, New York

We have received your request for information regarding occurrences of Federally-listed threatened and endangered species within the vicinity of the above-referenced project/property. Due to increasing workload and reduction of staff, we are no longer able to reply to endangered species list requests in a timely manner. In an effort to streamline project reviews, we are shifting the majority of species list requests to our website at <http://www.fws.gov/northeast/nyfo/es/section7.htm>. Please go to our website and print the appropriate portions of our county list of endangered, threatened, proposed, and candidate species, and the official list request response. Step-by-step instructions are found on our website.

As a reminder, Section 9 of the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) prohibits unauthorized taking* of listed species and applies to Federal and non-Federal activities. Additionally, endangered species and their habitats are protected by Section 7(a)(2) of the ESA, which requires Federal agencies, in consultation with the U.S. Fish and Wildlife Service (Service), to ensure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat. An assessment of the potential direct, indirect, and cumulative impacts is required for all Federal actions that may affect listed species. For projects not authorized, funded, or carried out by a Federal agency, consultation with the Service pursuant to Section 7(a)(2) of the ESA is not required. However, no person is authorized to "take"* any listed species without appropriate authorizations from the Service. Therefore, we provide technical assistance to individuals and agencies to assist with project planning to avoid the potential for "take," or when appropriate, to provide assistance with their application for an incidental take permit pursuant to Section 10(a)(1)(B) of the ESA.

Project construction or implementation should not commence until all requirements of the ESA have been fulfilled. If you have any questions or require further assistance regarding threatened or endangered species, please contact the Endangered Species Program at (607) 753-9334. Please refer to the above document control number in any future correspondence.

Endangered Species Biologist: Sandra Doran

*Under the Act and regulations, it is illegal for any person subject to the jurisdiction of the United States to take (includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect; or to attempt any of these), import or export, ship in interstate or foreign commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any endangered fish or wildlife species and most threatened fish and wildlife species. It is also illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. "Harm" includes any act which actually kills or injures fish or wildlife, and case law has clarified that such acts may include significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife.

HNTB - Boston

APR 20 2011

Matt Santo

Subject: FW: FW: Empire Corridor High Speed Rail
Attachments: Corridor18.pdf; Corridor1.pdf; Corridor2.pdf; Corridor3.pdf; Corridor4.pdf; Corridor5.pdf; Corridor6.pdf; Corridor7.pdf; Corridor8.pdf; Corridor9.pdf; Corridor10.pdf; Corridor11.pdf; Corridor12.pdf; Corridor13.pdf; Corridor14.pdf; Corridor15.pdf; Corridor16.pdf; Corridor17.pdf; CorridorNeat3.pdf

From: David Rebecca [<mailto:dxrebecc@gw.dec.state.ny.us>]
Sent: Monday, May 02, 2011 2:10 PM
To: Karen Kays
Cc: Robert Ewing
Subject: Re: FW: Empire Corridor High Speed Rail

Hi Karen,

My apologies for missing your phone call. I created GIS maps using the CEA data we have internally which is also public. Each CEA is also located on our website as well at:

<http://www.dec.ny.gov/permits/6184.html>

The first map (All in PDF Format) is a neat map of the whole state with a legend, than I reduced the scale and made several maps for each area so that you can visually see the details. I hope this will work for your needs. Best regards and thanks for providing the shape file,

David.

>>> "Karen Kays" <Kays@pinyon-env.com> 4/28/2011 3:55 PM >>>

Hi David,

Below is the original request for information that I has sent to Bob. As you will see the attached documents are a general map of the corridor and shape files of the project centerline and half mile buffer. I left you a voice message but, I thought this might be a helpful first step in understanding our data needs. Please feel free to contact me at any time to discuss. Thank you.

Karen Carling Kays
Environmental Scientist

Pinyon Environmental, Inc.
518.583.8012 tel

From: Karen Kays
Sent: Friday, February 11, 2011 11:46 AM
To: 'RLEWing@gw.edc.state.ny.us'
Subject: Empire Corridor High Speed Rail

Good Morning Mr. Ewing:

Thank you for returning my phone call yesterday. Below is a description of the project and a request for data. Please note, this email will be followed by a formal mailed request. I've also attached shape files of the project centerline and ½ mile buffer.

PROJECT INFORMATION AND DATA REQUEST:

The New York State Department of Transportation (NYSDOT), in cooperation with the Federal Railroad Administration (FRA), is beginning the environmental review process for the proposed New York State High Speed Rail Empire Corridor Project between Pennsylvania Station in New York City and Niagara Falls, New York. The corridor proceeds north from New York City through Albany and then turns west to Schenectady, passing through Syracuse, Rochester and Buffalo before terminating at Niagara Falls, a distance of 463 miles (Figure 1).

A Tier 1 Environmental Impact Statement (EIS), in accordance with the National Environmental Policy Act (NEPA) of 1969 and the New York State Environmental Quality Review Act (SEQRA), is being completed to evaluate and document potential improvements and projects to intercity passenger rail service within the corridor. The projects identified in the Tier 1 EIS will be subject to detailed environmental review in Tier 2 project-level NEPA documents.

In order to complete the Tier 1 EIS, the project team will be reviewing available data. At this time, we respectfully request any Geographic Information System data regarding SEQR Critical Environmental Areas along or within a ½ mile of the 463 mile corridor (Figure 1). While geographic information systems (GIS) data is preferred, any mappable data your office could provide would be greatly appreciated.

If you have any questions, please feel free to contact me. Thank you.

Karen Carling Kays
Environmental Scientist

Pinyon Environmental, Inc.
376 Broadway, Suite 210
Saratoga Springs, NY 12866
518.583.8012 tel
518.691.8693 fax
518.222.6993 cell

Kays@pinyon-env.com
www.pinyon-env.com
Certified DBE in NY, CO, UT



RECEIVED

JUL 13 2011

HNTB BOSTON

16591/NY

July 7, 2011

Mr. Joseph G. Grilli, P.E.
Environmental Manager
HNTB Corporation
31 St. James Avenue, Suite 300
Boston, MA 02116

RE: High Speed Rail Project (PIN S937.51.171)

Dear Mr. Grilli:

This responds to your letter of March 18, 2011 concerning the environmental review process for the subject project. I apologize for the delay of my response as it took some time to search our files for the copies of all existing bridge permits you requested.

The U. S. Coast Guard (USCG), as a regulatory agency, is responsible for issuance of bridge permits pursuant to The General Bridge Act of 1946 (33 U.S.C 525-533) and promulgation of drawbridge regulations (33 U.S.C. 499). For the referenced project, the USCG has federal jurisdiction over all structures crossing navigable waters of the United States. Not all of the bridges in the project area will require a USCG Bridge Permit; however, the USCG will need to review each bridge action on a case-by-case basis. Some of the waterways crossed by the project may fall under various other categories of jurisdiction. In all cases however, we must address the reasonable needs of navigation and coordinate with appropriate waterway users, facilities and bridge owners in addition to Federal Railroad Administration (FRA) and their consultants, as applicable. The Coast Guard's Bridge Permit Application Guide can be found at http://www.uscg.mil/hq/cg5/cg551/BPAG_2008.pdf

Following a review of our files for the project area, we have identified five bridges for which permits were issued. They are as follows:

1. Spuyten Duyvil RR Bridge over the Harlem River
2. Metro-North RR Bridge over the Croton River
3. Metro-North RR Bridge over Peekskill Creek
4. Livingston Avenue RR Bridge
5. New Hamburg RR Bridge over Wappinger Creek

Our office has the first four listed bridge permits on file, which are provided as enclosures (1) through (4), respectively. Unfortunately, we do not have a copy of the permit issued by the Secretary of War in 1929 for the bridge crossing Wappinger Creek.

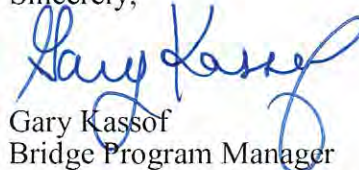
16591
July 7, 2011

The USCG will coordinate with all other resource and permitting agencies (federal, state & local) in conjunction with our bridge permitting process. We will also coordinate with USCG Sector New York Waterways Management Division on all bridge construction and modification issues. Please note that dredging and placement of fill with exception of that pertaining to a bridge structure itself, is not within the purview of the USCG, but rather with the U.S. Army Corps of Engineers.

As you are aware other federal agencies have oversight responsibilities for other environmental areas to ensure that impacts on the human environment are addressed and mitigated as necessary. It is recommended that the environmental process for this project include (if not already included) coordination with federal, state and local agencies with jurisdiction or expertise over all aspects of the project.

If you have questions in the interim, please contact Chris Bisignano, project manager, at (212) 668-7994.

Sincerely,



Gary Kassof
Bridge Program Manager
First Coast Guard District
By direction of the District Commander

Enclosure: (1) Spuyten Duyvil RR Bridge Permit Amendment, Harlem River
(2) Metro-North RR Bridge Permit, Croton River
(3) Metro-North RR Bridge Permits, Peekskill Creek
(4) Livingston Avenue RR Bridge Permit, Hudson River

Cc: ACOE, New York District
David Chan, Project Manager, NYSDOT

WHEREAS, Under date of August 28, 1894, the Acting Secretary of War approved plans for rebuilding the bridge of the New York Central and Hudson River Railroad across Spuyten Duyvil Creek, at its mouth, in the State of New York;

AND WHEREAS, Under date of November 22, 1897, the Secretary of War approved the plans of a temporary pile trestle bridge at said place to be used while said permanent bridge was being constructed, subject to the following condition, inter alia:

"4. That the new permanent bridge, the plans of which were approved by the Acting Secretary of War as aforesaid, shall be completed and put in service by January 1, 1900; and that within ninety days after the completion of said new permanent bridge, said company shall completely remove said temporary bridge as well as all portions of the present structure not embodied in the said new permanent bridge, all at its own expense";

AND WHEREAS, The New York Central & Hudson River Rail Road Company has now applied to the Secretary of War for an extension of time for the complete removal of said temporary pile trestle bridge;

NOW THEREFORE, This is to certify that, in accordance with the recommendation of the Chief of Engineers, the Secretary of War hereby extends the time for the complete removal of said temporary pile trestle bridge to a period not later than May 1, 1903.

WITNESS my hand this 24th day of May, 1901.

Elihu Root,

Secretary of War.

Copy of 23428/26.



BRIDGE PERMIT

MAR 17 1995

(6-95-1)

WHEREAS by Title V of an act of Congress approved August 2, 1946, entitled "General Bridge Act of 1946," as amended (33 U.S.C. 525-533), the consent of Congress was granted for the construction, maintenance and operation of bridges and approaches thereto over the navigable waters of the United States;

AND WHEREAS the Secretary of Transportation has delegated the authority of Section 502(b) of that act to the Commandant, U.S. Coast Guard by Section 1.46(c) of Title 49 Code of Federal Regulations;

AND WHEREAS before construction is commenced, the Commandant must approve the location and plans of any such bridge and may impose any specific conditions relating to the construction, maintenance and operation of the structure deemed necessary in the interest of public navigation, such conditions to have the force of law;

AND WHEREAS the Commandant of the Coast Guard has further delegated to the District Commanders by Section 1.01-60(b) of Title 33 Code of Federal Regulations authority to issue permits for the construction, reconstruction, or alteration of bridges across navigable waters of the United States;

AND WHEREAS the - METRO-NORTH COMMUTER RAILROAD COMPANY - has submitted for approval plans for modification of a bridge constructed across the Croton River between Ossining and Croton-on-Hudson, New York;

NOW THEREFORE, This is to certify that the location and plans revised June 1994 are hereby approved by the Commander, First Coast Guard District, subject to the following conditions:

1. No deviation from the approved plans may be made either before or after completion of the structure unless the modification of said plans has previously been submitted to and received the approval of the District Commander.

2. The construction of falsework, cofferdams or other obstructions, if required, shall be in accordance with plans submitted to and approved by the District Commander prior to modification of the bridge. All work shall be so conducted that the free navigation of the waterway is not unreasonably interfered with and the present navigable depths are not impaired. Timely notice of any and all events that may affect navigation shall be given to the District Commander during modification of the bridge. Methods shall be employed to ensure that there will be no increases of sedimentation and turbidity in the waterway during construction. The channel or channels

MAR 17 1995

Continuation Sheet

BRIDGE PERMIT

Metro-North Railroad Bridge across the Croton River
between Ossining and Croton-on-Hudson, New York

(6-95-1)

through the structure shall be promptly cleared of all obstructions placed therein or caused by the modification of the bridge to the satisfaction of the District Commander, when in the judgment of the District Commander the modification work has reached a point where such action should be taken, but in no case later than 90 days after the bridge has been opened to traffic.

3. Issuance of this permit does not relieve the permittee of the obligation or responsibility for compliance with the provisions of any other law or regulation as may be under the jurisdiction of the U. S. Department of Commerce, National Marine Fisheries Service; State of New York: Department of State; Department of Environmental Conservation, or any other federal, state or local authority having cognizance of any aspect of the location, modification or maintenance of said bridge.

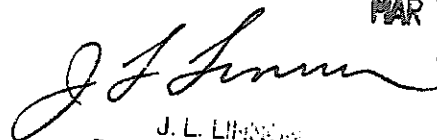
4. All parts of the existing to be modified Metro-North Railroad Bridge across the Croton River, mile 0.0, not utilized in the new modified bridge shall be removed in their entirety and the waterway cleared to the satisfaction of the District Commander. A period of 90 days subsequent to the completion of the modified Metro-North Railroad Bridge will be allowed for such removal and clearance.

5. A bridge fendering system shall be installed and maintained in good condition by and at the expense of the owner of the bridge when so required by the District Commander. Said installation shall be for the safety of navigation and be in accordance with plans submitted to and approved by the District Commander prior to its construction.

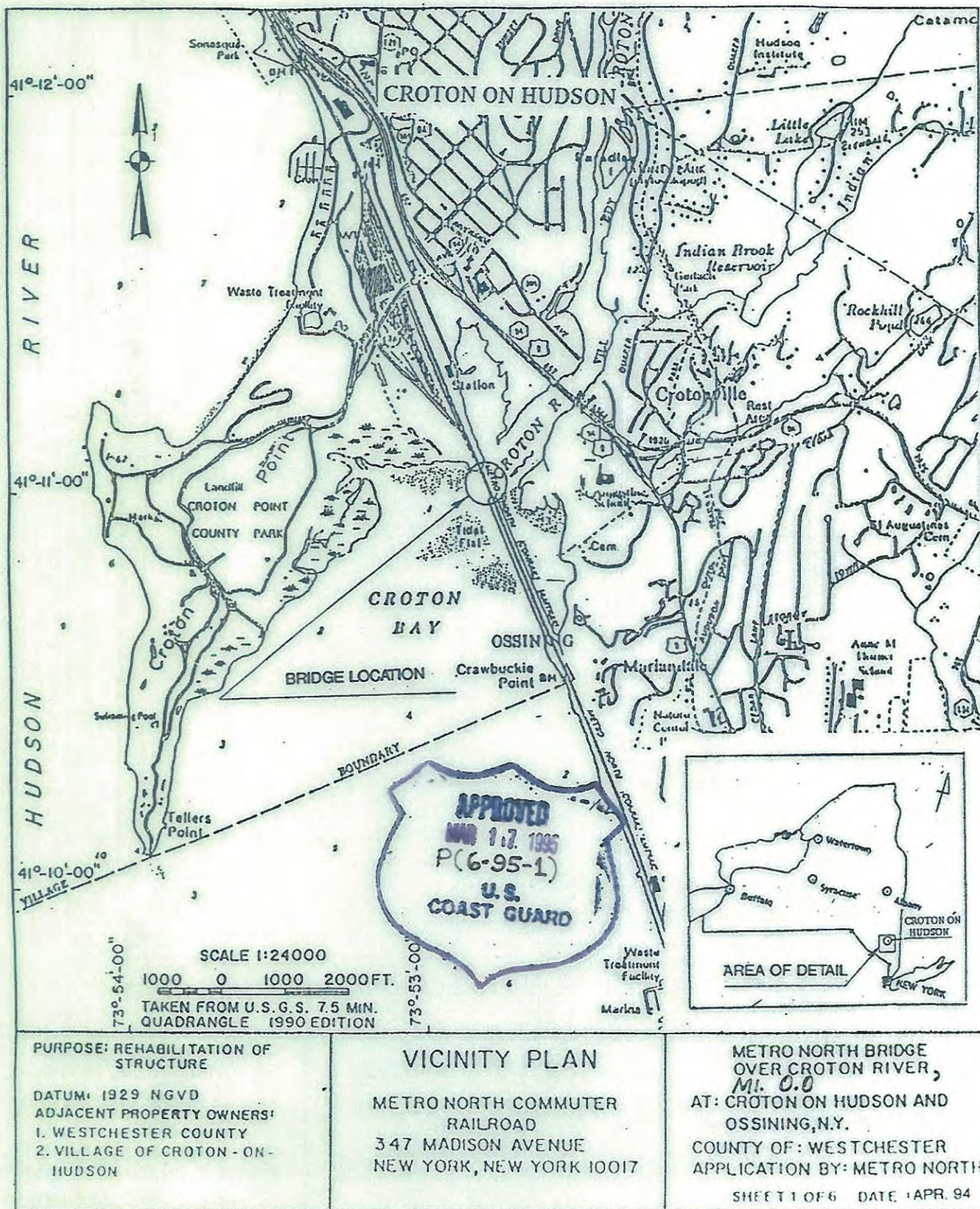
6. When the existing to be modified bridge is no longer used for transportation purposes, it shall be removed in its entirety or to an elevation deemed appropriate by the District Commander and the waterway cleared to the satisfaction of the District Commander. Such removal and clearance shall be completed by and at the expense of the owner of the bridge upon due notice from the District Commander.

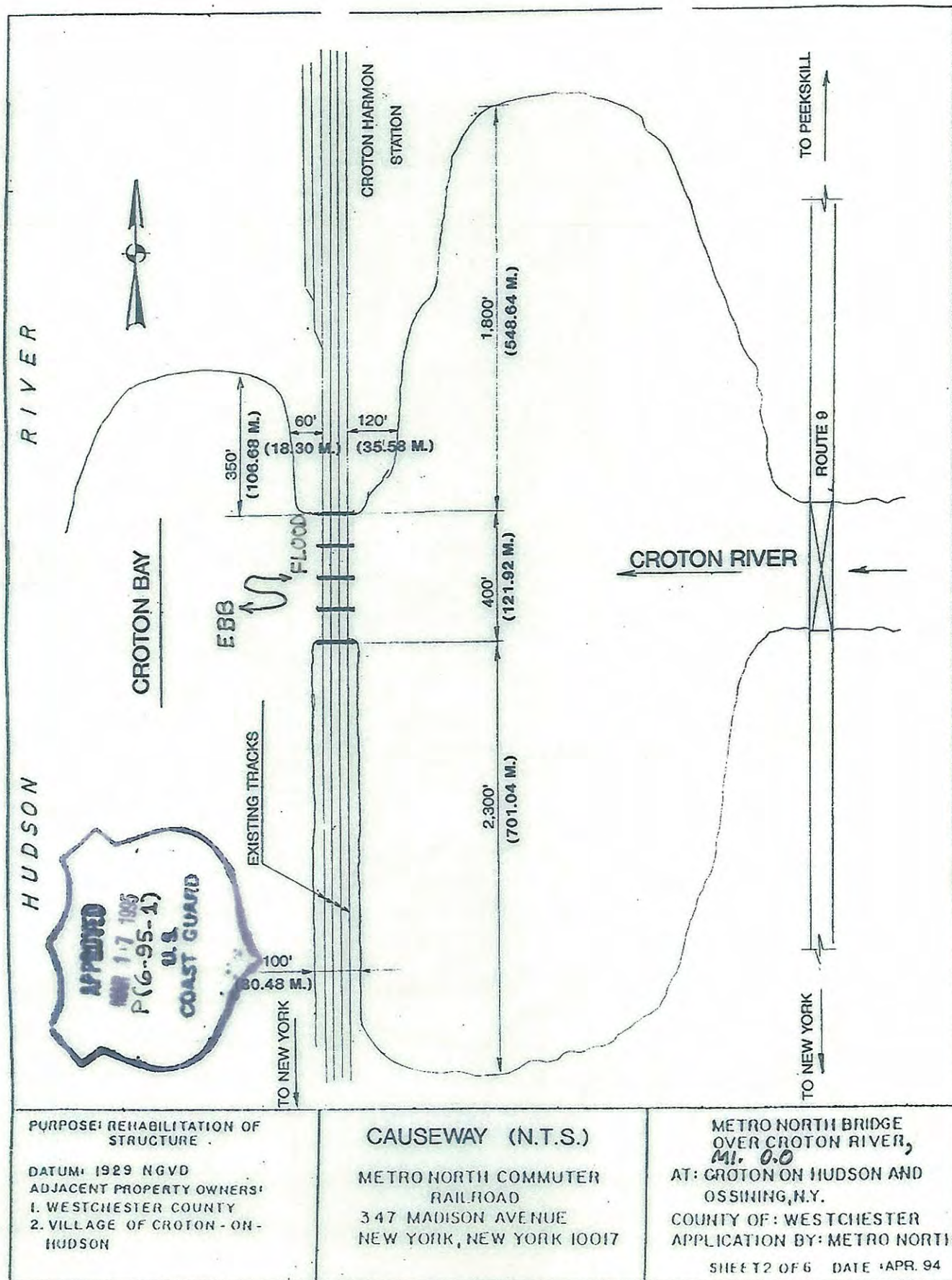
7. The approval hereby granted shall cease and be null and void unless modification of the bridge is commenced within three years and completed within five years after the date of this permit.

MAR 17 1995

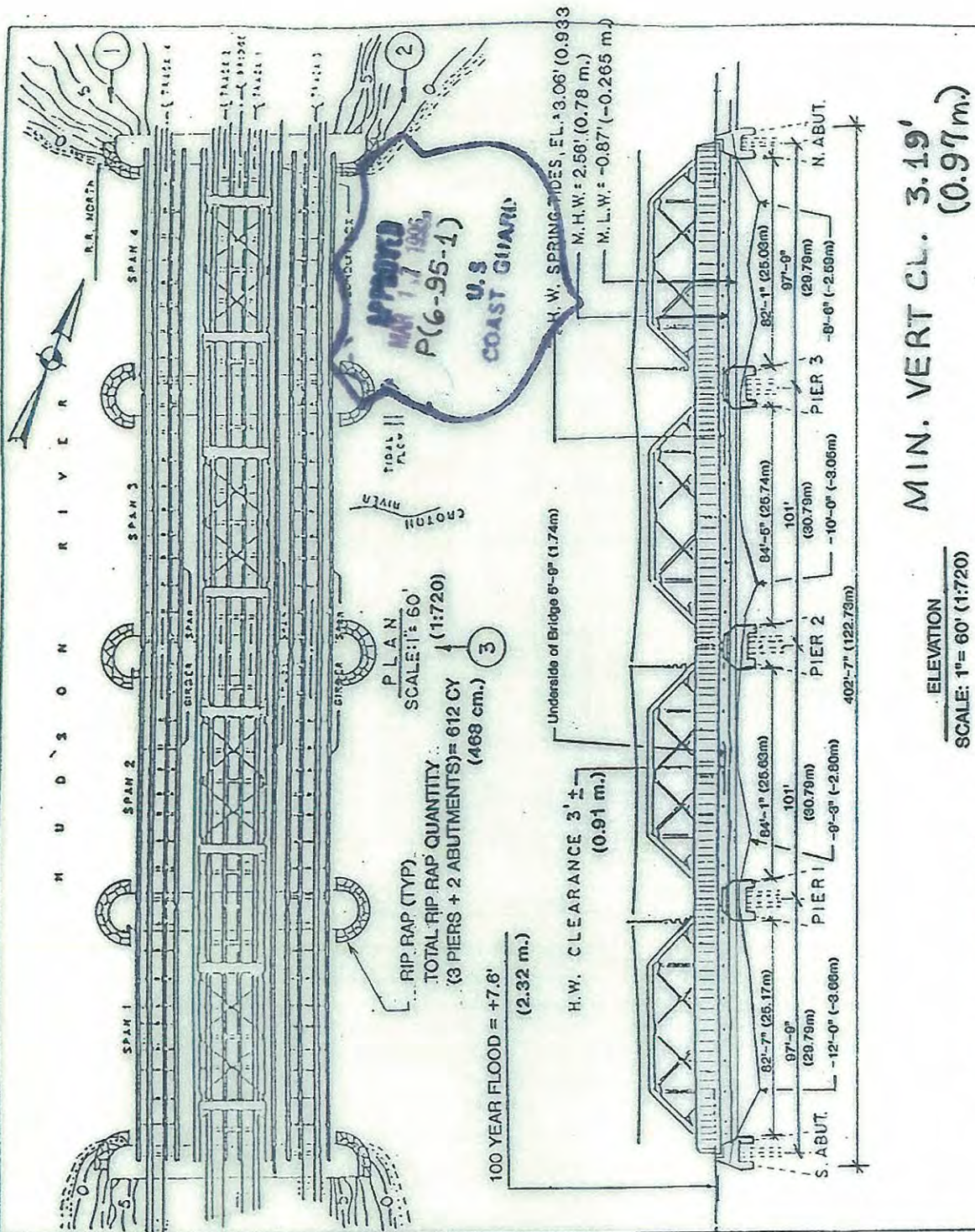


J. L. LINTON
Rear Admiral, U. S. Coast Guard
Commander, First Coast Guard District





Revised: June 94



The nearest tide station for which NOAA provides a recent tidal datum is at Haverstraw. Haverstraw is opposite Croton Point.

PURPOSE: REHABILITATION OF STRUCTURE

DATUM: 1929 NGVD

ADJACENT PROPERTY OWNERS:

1. WESTCHESTER COUNTY
2. VILLAGE OF CROTON-ON-HUDSON

PLAN AND ELEVATION

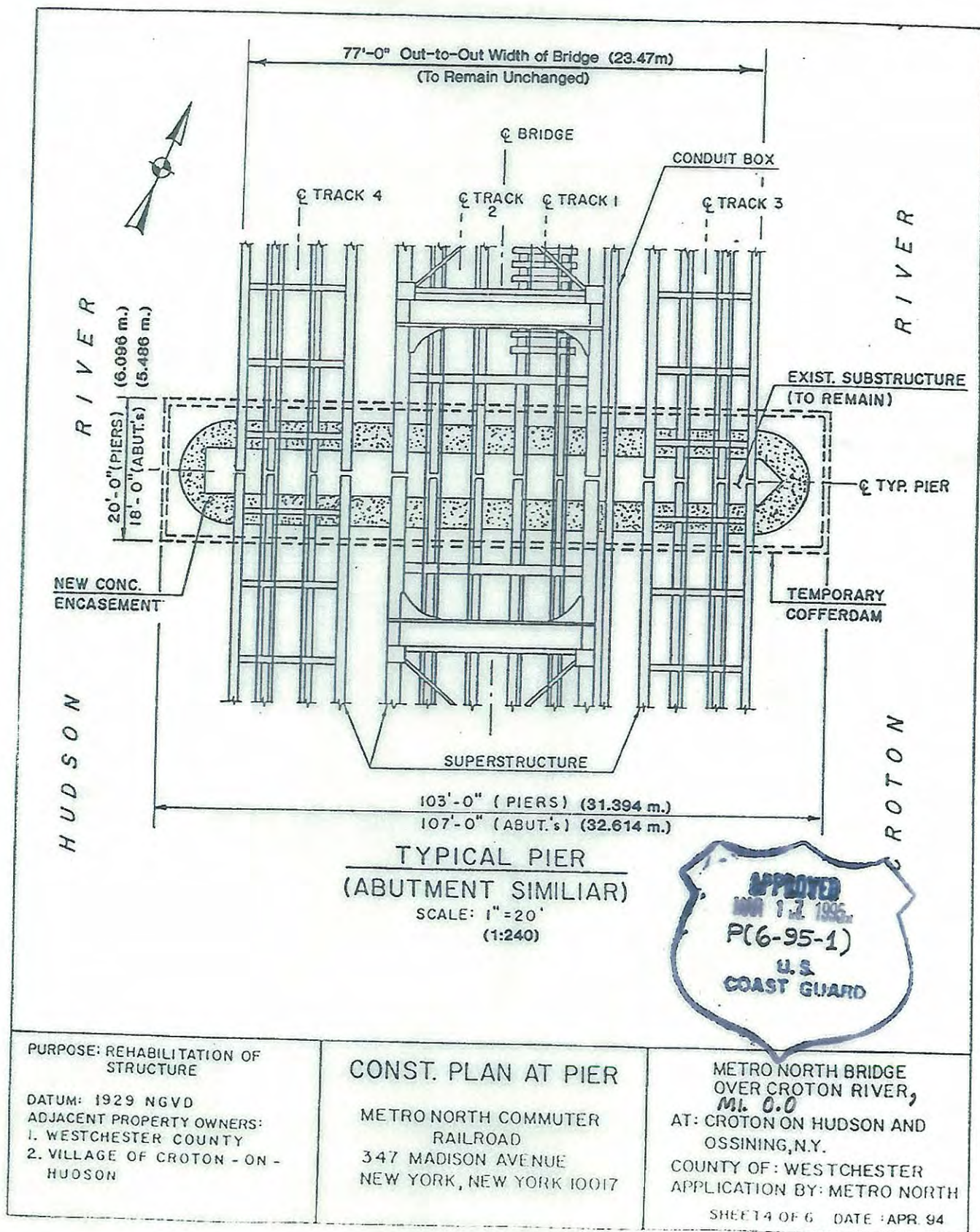
METRO NORTH COMMUTER RAILROAD

347 MADISON AVENUE
NEW YORK, NEW YORK 10017

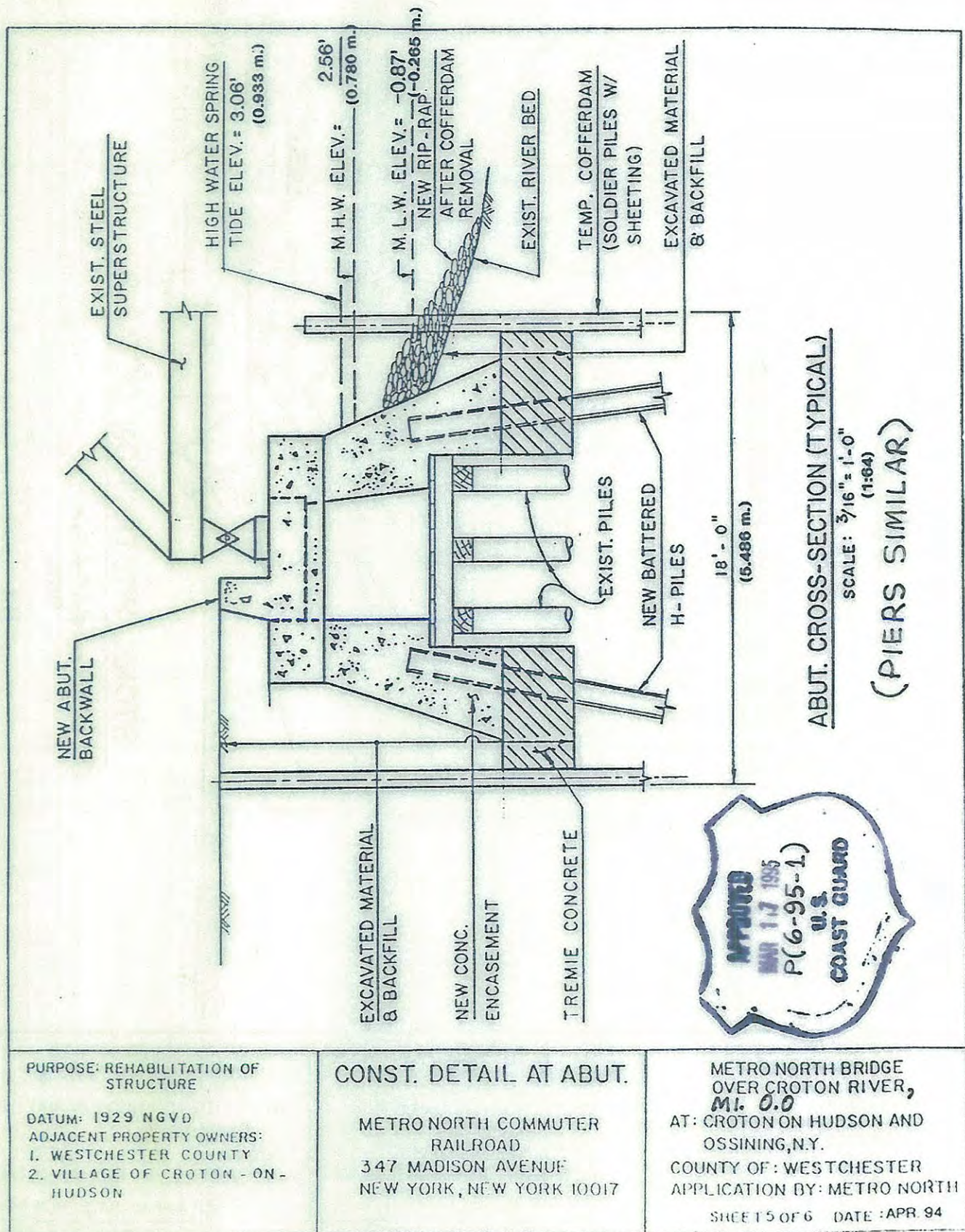
METRO NORTH BRIDGE
OVER CROTON RIVER,
Mi. 0.0
AT: CROTON ON HUDSON AND
OSSINING, N.Y.
COUNTY OF: WESTCHESTER
APPLICATION BY: METRO NORTH

SHEET 3 OF 6 DATE: APR. 94

Revised: June 94



Revised: June 94



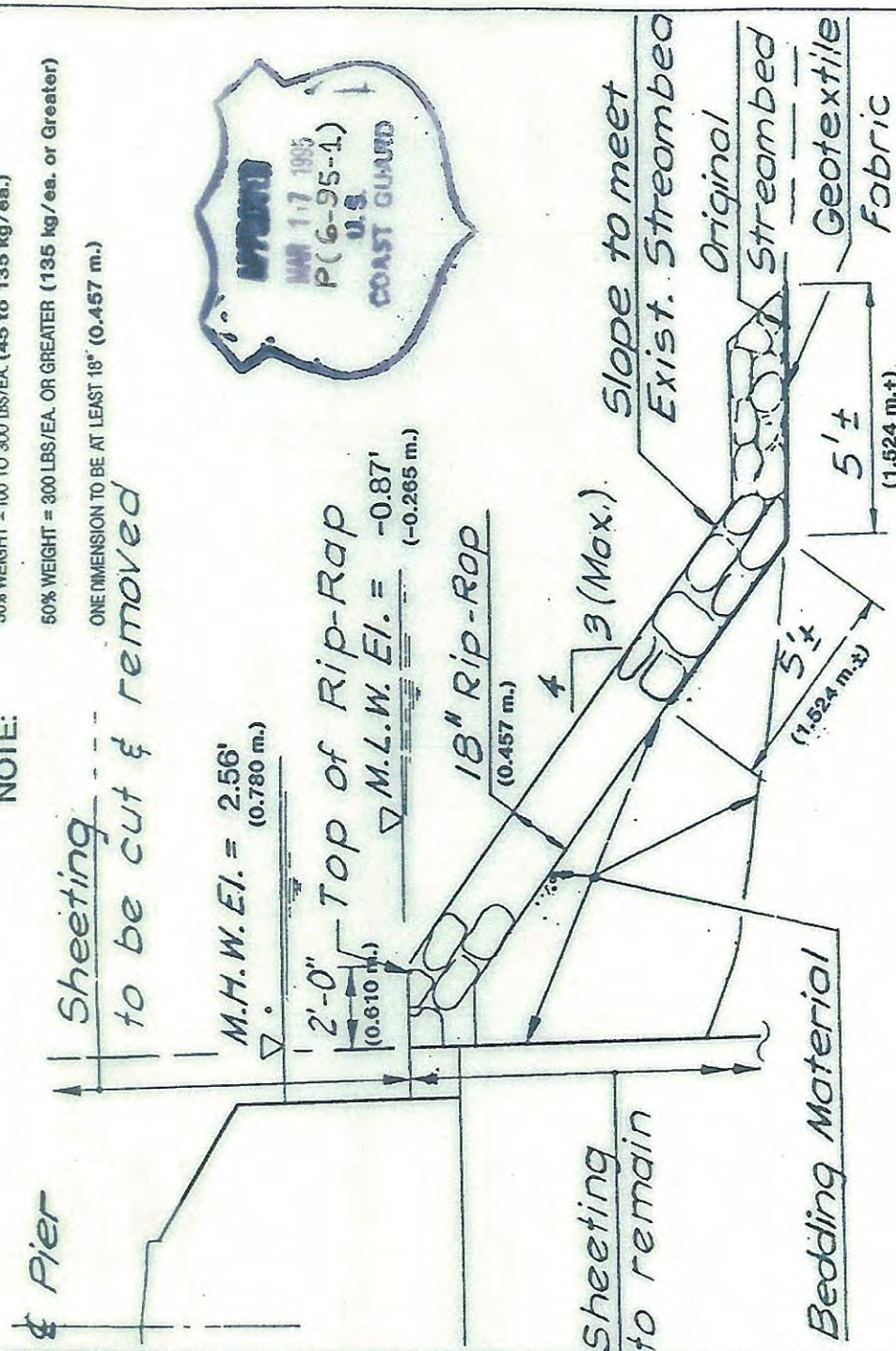
Revised: June 94

TOTAL RIP RAP = 612CY (468 cm.)

NOTE: 50% WEIGHT = 100 TO 300 LBS/EA. (45 to 135 kg/ea.)

50% WEIGHT = 300 LBS/EA. OR GREATER (135 kg/ea. or Greater)

ONE DIMENSION TO BE AT LEAST 18" (0.457 m.)



STONE PROTECTION DETAILS

Scale: 1/4" = 1'-0" (1:48)

PURPOSE: REHABILITATION OF STRUCTURE

DATUM: 1929 NGVD

ADJACENT PROPERTY OWNERS:

1. WESTESTER COUNTY
2. VILLAGE OF CROTON - ON-HUDSON

CONST. DETAIL AT PIER

METRO NORTH COMMUTER RAILROAD

347 MADISON AVENUE
NEW YORK, NEW YORK 10017

METRO NORTH BRIDGE
OVER CROTON RIVER,
MI. 0.0

AT: CROTON ON HUDSON AND
OSSINING, N.Y.

COUNTY OF: WESTCHESTER
APPLICATION BY: METRO NORTH

SHEET 6 OF 6 DATE: APR. 94

Revised: June 94



BRIDGE PERMIT

APR 01 1998

AMENDMENT
(12-94a-1)


WHEREAS by a permit issued on 4 October 1994, the Commander, First Coast Guard District approved the location and plans of a railroad bridge to be constructed by Metro-North Commuter Railroad Company across Peekskill Creek at Peekskill, New York, under authority of the General Bridge Act of 1946, as amended;

AND WHEREAS condition 1 of that permit provides that no deviation from the approved plans may be made either before or after completion of the structure unless the modification of said plans has previously been submitted to and received the approval of the Commander, First Coast Guard District, and condition 6 required that the temporary, detour bridge be removed no later than 90 days subsequent to the opening to traffic of the new permanent bridge and the - METRO-NORTH COMMUTER RAILROAD COMPANY- now has submitted for approval revised plans indicating modification to the previously approved plans and requests that the time for removal of the temporary bridge be extended;

NOW THEREFORE, This is to certify that plan sheet 5 (of 6) last revised 21 April 1997 hereby approved supersedes plan sheet 5 (of 6) revised February 1994 and supplements plan sheet 1 (of 6) dated October 1993, sheets 2 and 6 revised January 1994 and sheets 3 and 4 revised February 1994 previously approved. In granting this approval, all conditions to which the original permit was subject remain in force with condition 6 modified as follows:

6. The temporary, detour bridge, or incomplete parts thereof, shall be removed in their entirety except for piles which shall be removed to a minimum of five feet below the natural bottom and the waterway cleared to the satisfaction of the District Commander. A period of 180 days subsequent to the opening to traffic of the new permanent bridge will be allowed for such removal and clearance.

APR - 1 1998


R. M. LARRABEE
Rear Admiral, U.S. Coast Guard
Commander, First Coast Guard District

ENCLOSURE (3)

100 Yr. Flood Hudson River
El. 7.6' (2.32 m)

100 Yr. Flood Annsville Creek
El. 5.4' (1.65 m)

Datum N.G.V.D. El. 0.0

Approximate Streambed
El. -8.0 (-2.44 m)

Pile Cutoff
Elevation

5'

1.52m

M.H.W. El. 2.9' (0.88 m)

M.L.W. El. -0.4' (0.12 m)

Min. Vert. Clear.
1.7' (0.52 m) At
North Abutment

Min. Bottom of Structure
El. 4.6' (1.40 m) At
North Abutment

1

Min. Top of Rail
El. 8.4' (2.56 m)

31'-0" (Typ.)
(9.14 m)

12" Ø Pipe Pile (Typ.)

WT 4

44 Spans

Approx. 13'-0"
(3.96 m)

Timber Tie (Typ.)

47 Spans

15'-0" (Typ.)
(4.57 m)

Track 1

Track 2

Temporary Run-Around Structure

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4/21/97 - Added Note 3 and Modified Typical Section

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BRIDGE PERMIT

OCT 4 1994

(12-94-1)

WHEREAS by Title V of an act of Congress approved August 2, 1946, entitled "General Bridge Act of 1946," as amended (33 U.S.C. 525-533), the consent of Congress was granted for the construction, maintenance and operation of bridges and approaches thereto over the navigable waters of the United States;

AND WHEREAS the Secretary of Transportation has delegated the authority of Section 502(b) of that act to the Commandant, U.S. Coast Guard by Section 1.46(c) of Title 49 Code of Federal Regulations;

AND WHEREAS before construction is commenced, the Commandant must approve the location and plans of any such bridge and may impose any specific conditions relating to the construction, maintenance and operation of the structure deemed necessary in the interest of public navigation, such conditions to have the force of law;

AND WHEREAS the Commandant of the Coast Guard has further delegated to the District Commanders by Section 1.01-60(b) of Title 33 Code of Federal Regulations authority to issue permits for the construction, reconstruction, or alteration of bridges across navigable waters of the United States;

AND WHEREAS - METRO-NORTH COMMUTER RAILROAD COMPANY - has submitted for approval the location and plans of a bridge to be constructed across Peekskill Creek at Peekskill, New York;

NOW THEREFORE, This is to certify that the location and plan sheet 1 (of 6) dated October 1993, sheets 2 and 6 revised January 1994, and sheets 3, 4, and 5 revised February 1994 are hereby approved by the Commander, First Coast Guard District, subject to the following conditions:

1. No deviation from the approved plans may be made either before or after completion of the structure unless the modification of said plans has previously been submitted to and received the approval of the District Commander.

Bridge across Peekskill Creek at
Peekskill, New York

OCT 4 1994
(12-94-1)

2. The construction of falsework, cofferdams or other obstructions, if required, shall be in accordance with plans submitted to and approved by the District Commander prior to construction of the bridge. All work shall be so conducted that the free navigation of the waterway is not unreasonably interfered with and the present navigable depths are not impaired. Timely notice of any and all events that may affect navigation shall be given to the District Commander during construction of the bridge project. The channel or channels through the structure shall be promptly cleared of all obstructions placed therein or caused by the construction of the bridge to the satisfaction of the District Commander, when in the judgment of the District Commander the construction work has reached a point where such action should be taken, but in no case later than 90 days after the new permanent bridge has been opened to traffic.

3. Issuance of this permit does not relieve the permittee of the obligation or responsibility for compliance with the provisions of any other law or regulation as may be under the jurisdiction of the State of New York, Department of Environmental Conservation, or any other federal, state or local authority having cognizance of any aspect of the location, construction or maintenance of said bridge.

4. All parts of the existing to be replaced Metro-North Railroad Bridge across Peekskill Creek, mile 0.0, not utilized in the new permanent bridge, shall be removed to a minimum of five feet below the natural bottom, and the fender system shall be removed to a minimum of two feet below the bottom. The waterway shall be cleared to the satisfaction of the District Commander. A period of 90 days subsequent to the opening to traffic of the new permanent bridge, mile 0.0, will be allowed for such removal and clearance.

5. The temporary, detour bridge shall be constructed in accordance with plan sheet 5 of 6 revised February 1994.

6. The temporary, detour bridge, or incomplete parts thereof, shall be removed in their entirety and the waterway cleared to the satisfaction of the District Commander. A period of 90 days subsequent to the opening to traffic of the new permanent bridge will be allowed for such removal and clearance.

OCT 4 1994

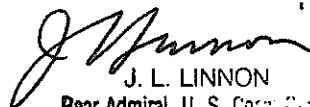
Bridge across Peekskill Creek at
Peekskill, New York

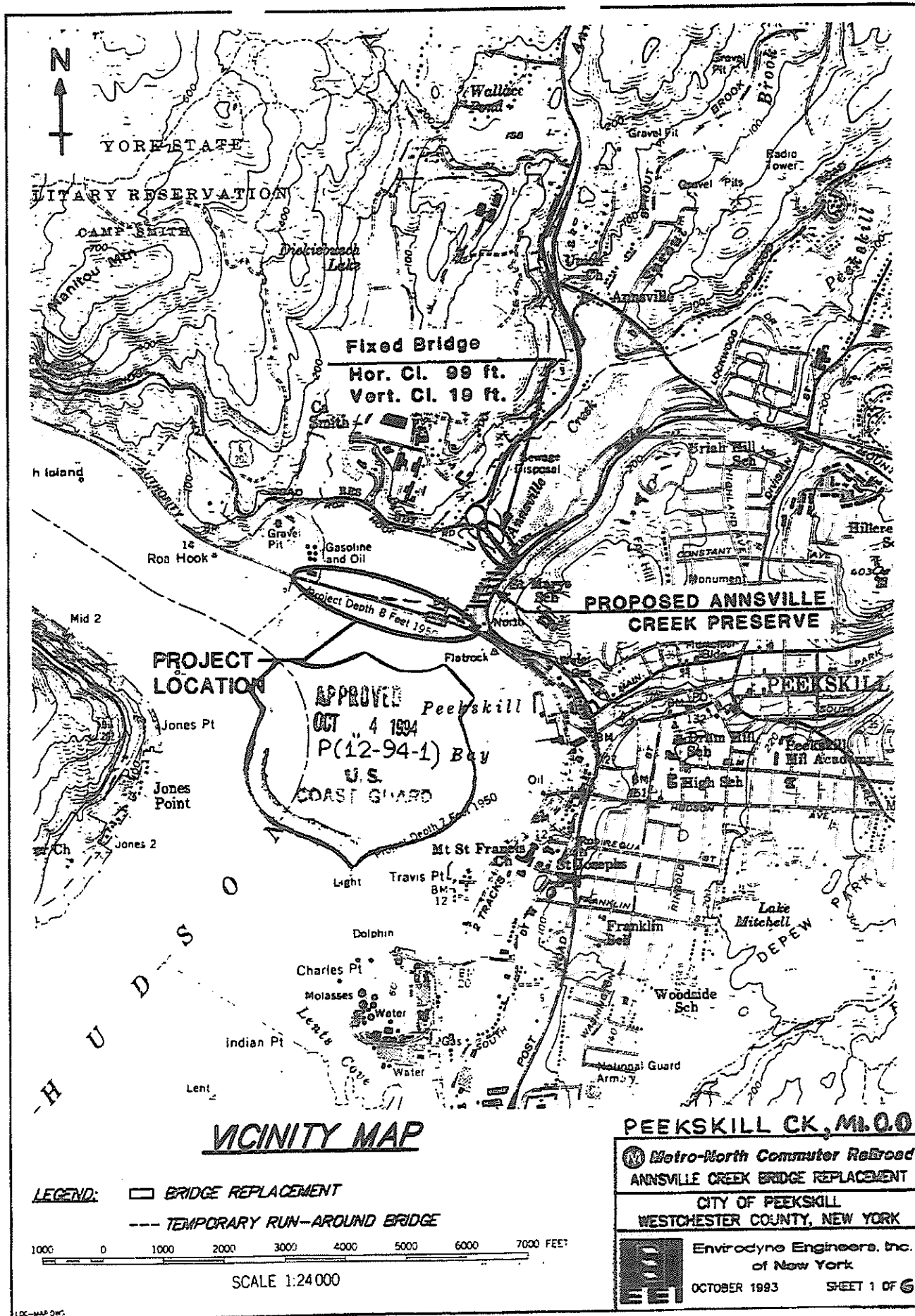
(12-94-1)


7. A bridge fendering system shall be installed and maintained in good condition by and at the expense of the owner of the bridge when so required by the District Commander. Said installation shall be for the safety of navigation and be in accordance with plans submitted to and approved by the District Commander prior to its construction.

8. When the proposed bridge is no longer used for transportation purposes, it shall be removed in its entirety or to an elevation deemed appropriate by the District Commander and the waterway cleared to the satisfaction of the District Commander. Such removal and clearance shall be completed by and at the expense of the owner of the bridge upon due notice from the District Commander.

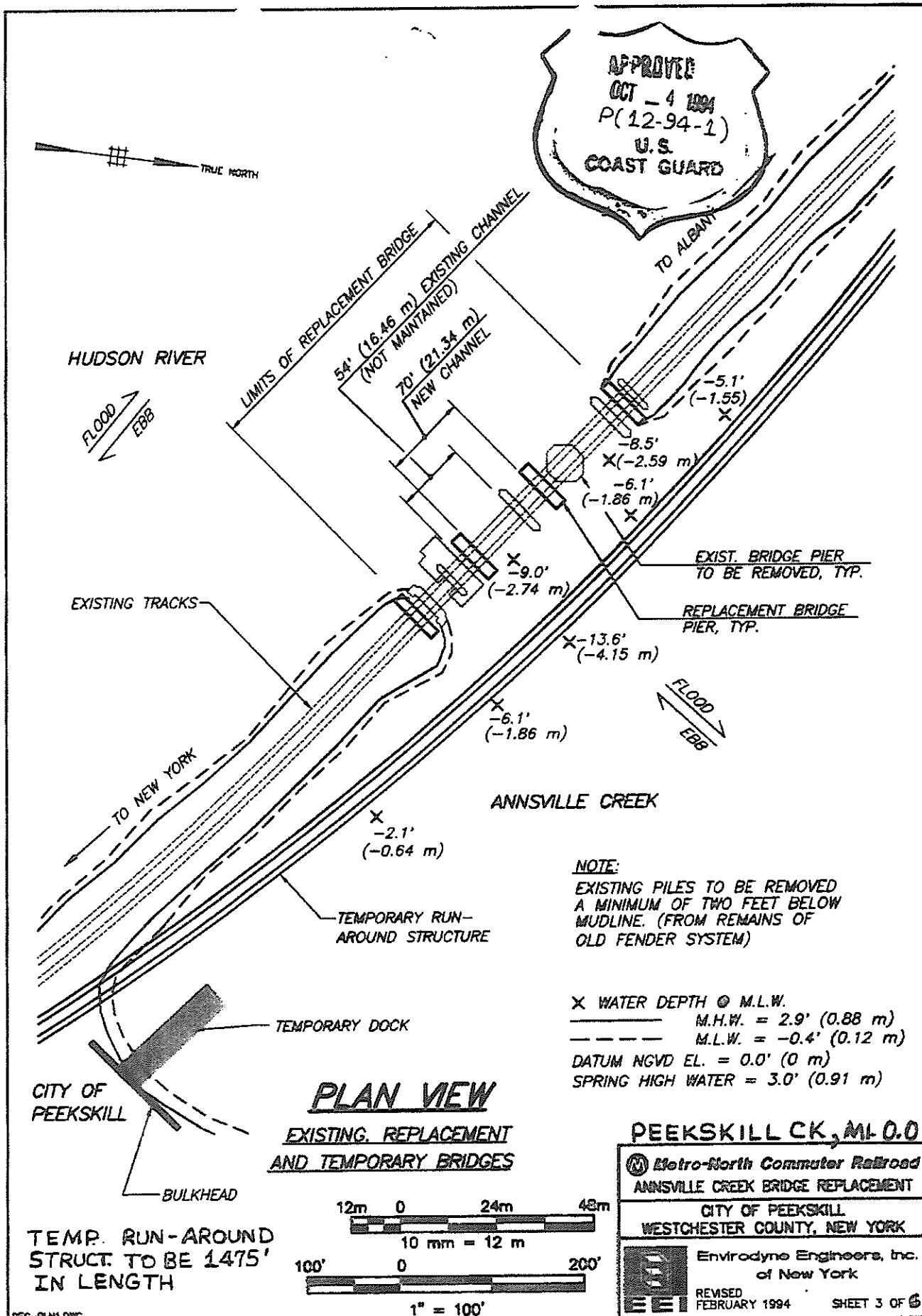
9. The approval hereby granted shall cease and be null and void unless construction of the bridge is commenced within three years and completed within five years after the date of this permit.

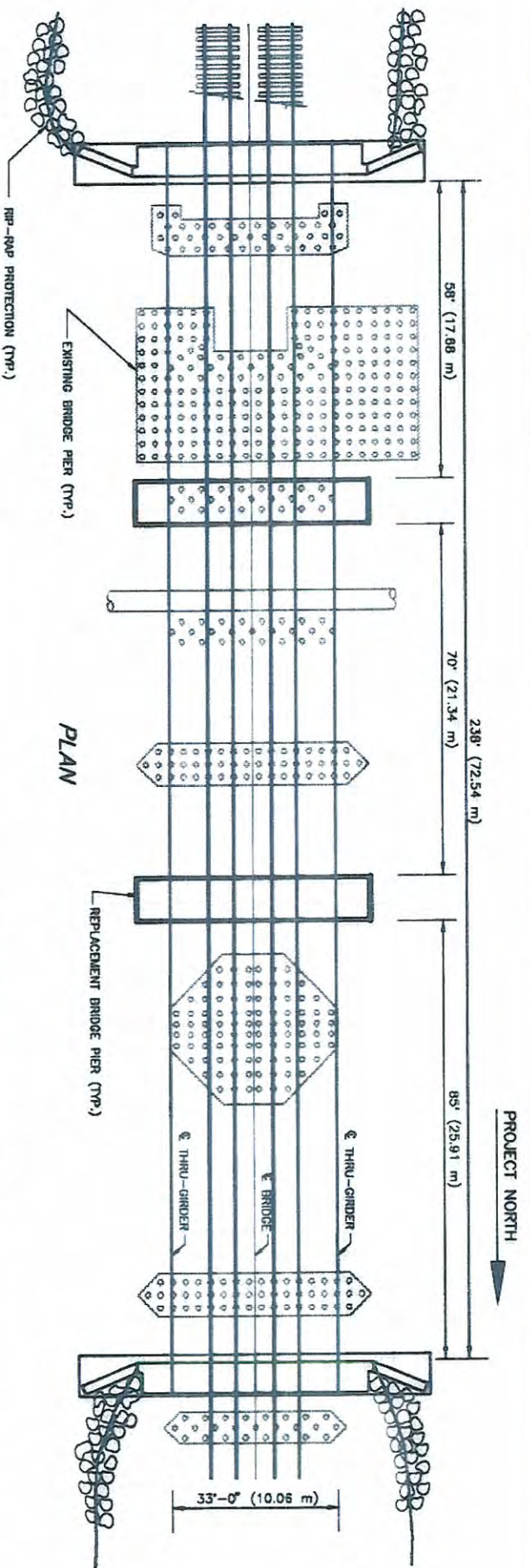

J. L. LINNON
Rear Admiral, U. S. Coast Guard
Commander, First Coast Guard District



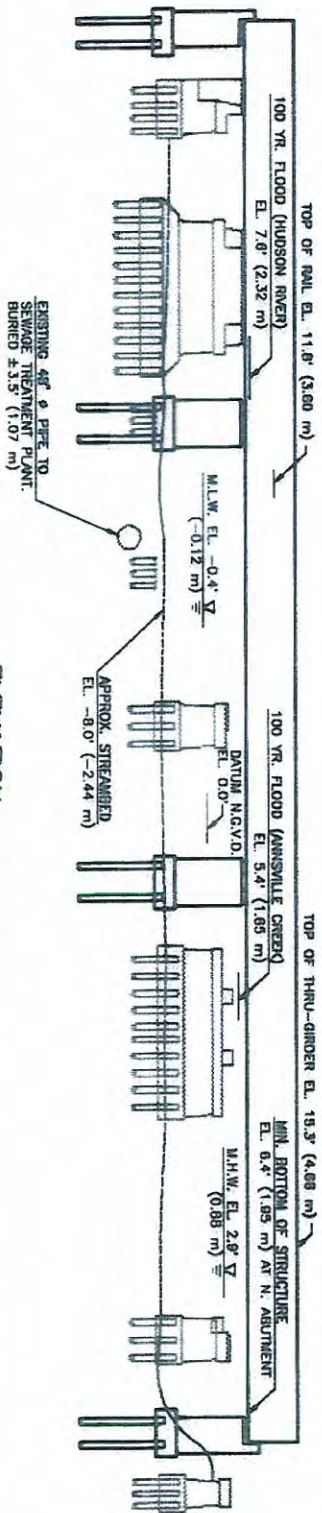
- LEGEND:**
-  **TEMPORARY PILE SUPPORTED DOCK**
25'x100' (7.62 m x 30.48 m)







PLAN



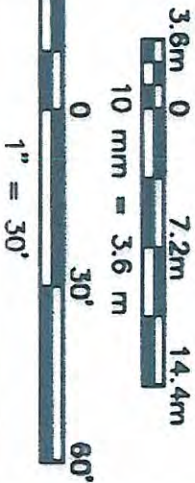
ELEVATION

REPLACEMENT BRIDGE

PEEKSKILL CK, MI. 0.0

- NOTES:**
1. EXISTING PIERS AND PILES TO BE REMOVED. A MINIMUM OF FIVE FEET BELOW MUDDLINE. (FROM EXISTING BRIDGE)
 2. MIN. VERTICAL CLEARANCE 3.5' (1.07 m)

APPROVED
Oct - 4 1994
P(12-94-1)
U.S.
COAST GUARD

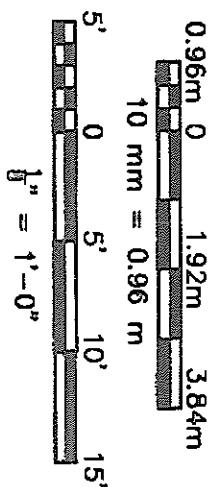
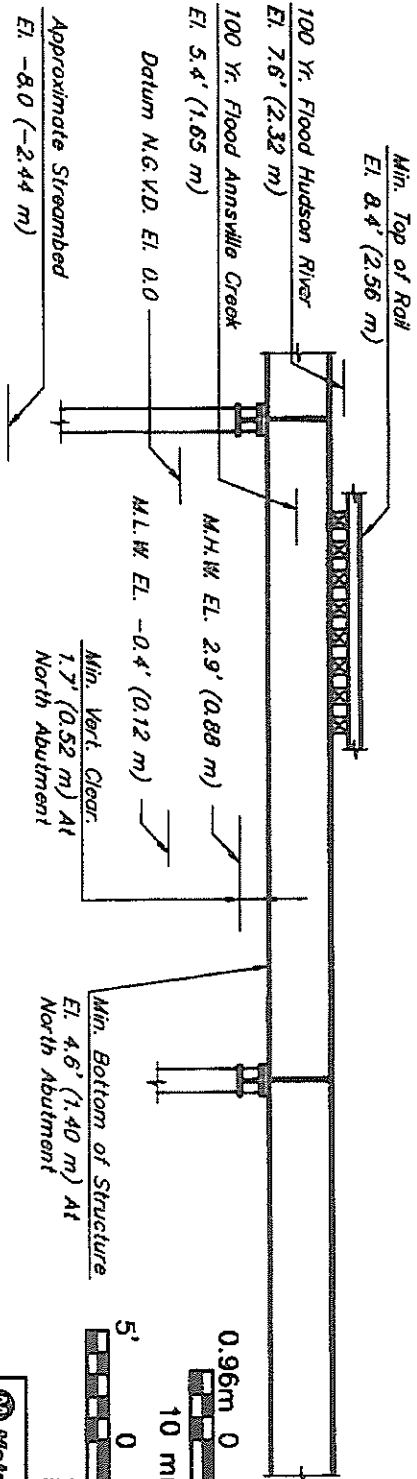
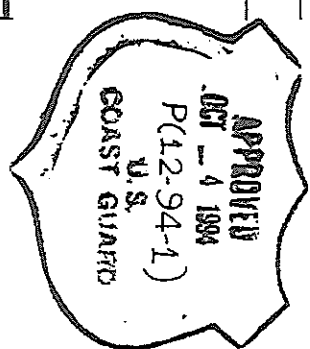
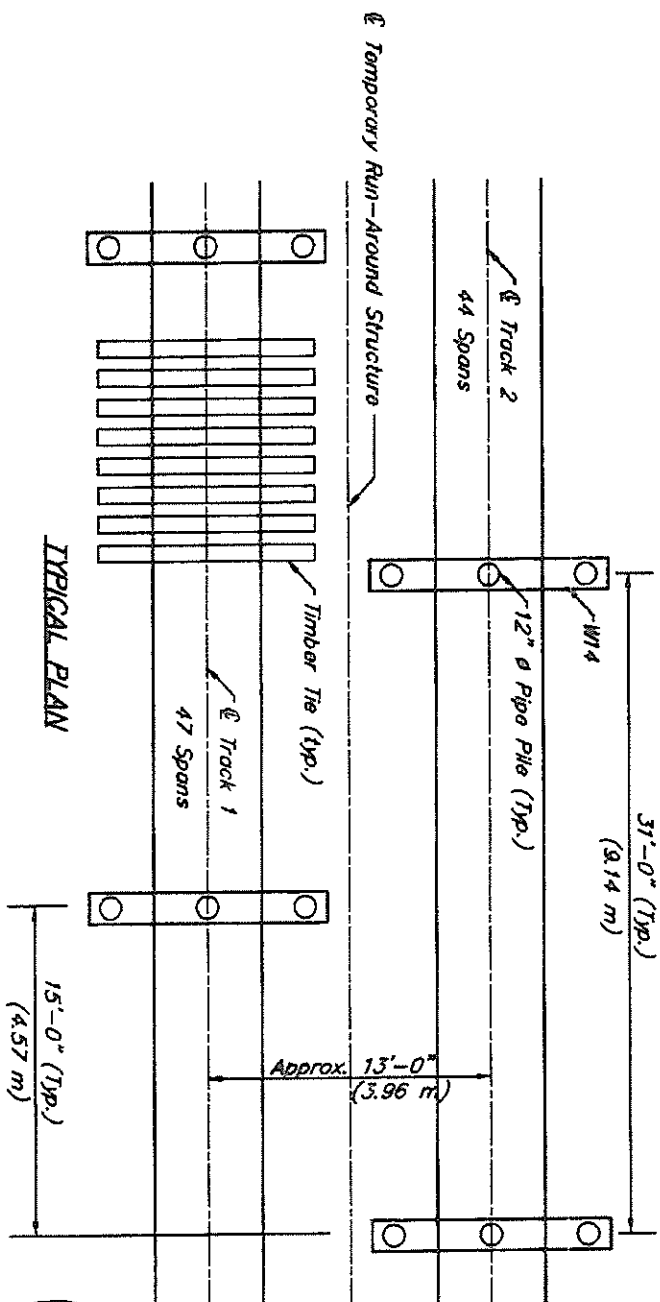


Metro-North Commuter Railroad
ANNVILLE CREEK BRIDGE REPLACEMENT
CITY OF PEEKSKILL
WESTCHESTER COUNTY, NEW YORK

Envirodyne Engineers, Inc.
of New York

REMOVED
FEBRUARY 1994

SHEET 4 OF 6

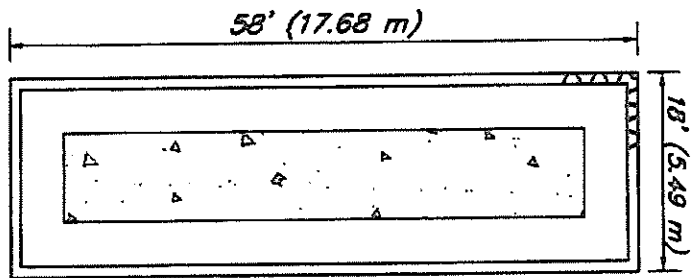


- NOTES:**
1. Min. Horizontal Clear. Normal to Channel is 28' (8.53 m)
 2. Temporary run-around structure to be removed upon completion of the construction of the new bridge.

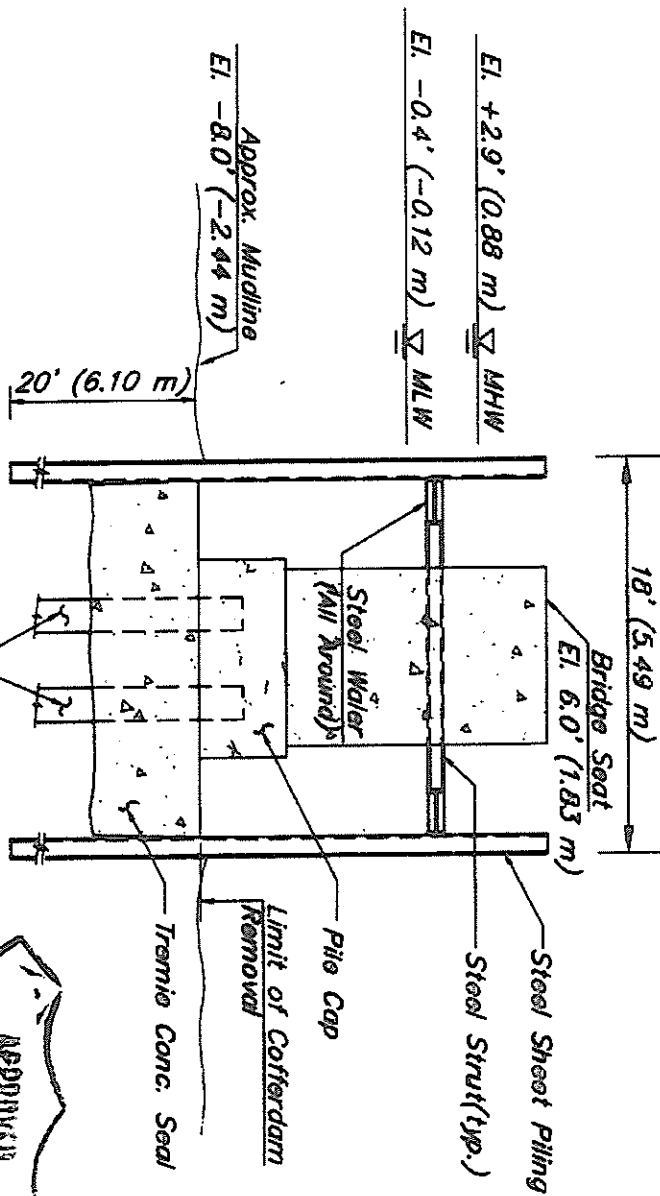
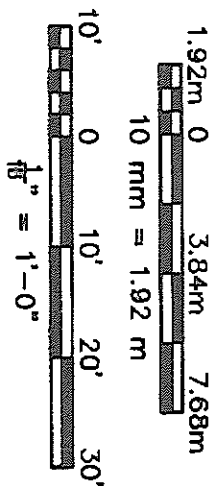
TEMPORARY RUN-AROUND STRUCTURE

PEEKSKILL CK, M.I. 0.0

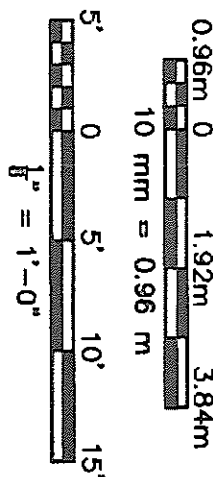
	Metro-North Railroad
	CITY OF PEEKSKILL
	ANNVILLE CREEK BRIDGE REPLACEMENT
	WESTCHESTER COUNTY, NEW YORK
	Envirodyne Engineers, Inc.
	of New York
	REVISIONS
FEBRUARY 1984 SHEET 5 OF 6	



PLAN



SECTION



COFFERDAM

PEEKSKILL CK, MI. 0.0

Metro-North Commuter Railroad
ANNVILLE CREEK BRIDGE REPLACEMENT

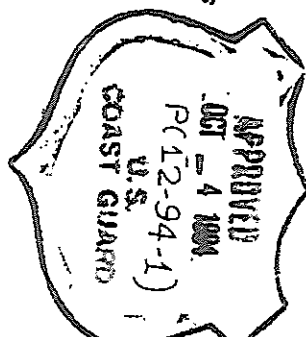
CITY OF PEEKSKILL
WESTCHESTER COUNTY, NEW YORK

Envirodyne Engineers, Inc.
of New York



REVISED
JANUARY 1984

SHEET 6 OF 6



EX B
VILANI
ID
#537
APPROVAL OF LOCATION AND PLANS OF BRIDGE.

(Authorized by Congress.)

U. S. MAILER OFFICE

NEW YORK, N. Y. C.

1923

Bridges
21 70

Whereas, By an act of Congress, approved March 2, 1923,

entitled, "An Act Granting the consent of Congress to the Hudson River Bridge Company at Albany to maintain two bridges already constructed across the Hudson River,"

the HUDSON RIVER BRIDGE COMPANY

was authorized to ~~construct a bridge across~~ maintain and operate two bridges already constructed across the Hudson River at Albany, in the County of Albany, in the State of New York, the bridges to be deemed to have been constructed

in accordance with the provisions of the act of Congress entitled "An act to regulate the construction of bridges over navigable waters," approved March 23, 1906, whereby it is provided that such bridge shall not be built or commenced until the plans and specifications for its construction, together with such drawings and map of location thereof as may be required for a full understanding of the subject, have been submitted to and approved by the Chief of Engineers and by the Secretary of War;

And whereas, The said HUDSON RIVER BRIDGE COMPANY

has submitted ^{one of said} and approval plans, specifications, drawings, and map of location of ~~a bridge~~ ^{as} proposed to be built across said river at said place, ~~and as proposed to be modified,~~ which comply with the requirements of said act of March 23, 1906;

Now therefore, This is to certify that the proposed location and said specifications and the plans which are hereto attached are hereby approved by the Chief of Engineers and by the Secretary of War, pursuant to the above-mentioned acts of Congress, subject to the following conditions:

1. That the District Engineer of the Engineer Department at Large in charge of the district within which the bridge is to be ^{be} built may supervise its ^{re} construction in order that said plans shall be complied with.

2. That all work shall be so conducted that the free navigation of the waterway shall not be unreasonably interfered with; that the present navigable depths shall not be impaired; and that the channel or channels through the structure

Copy of 55312/73
with 55312/68-71 plans attached

VILANI EX B1 *for 10 1/2 KC*
5/22/05

shall be promptly cleared of all falsework, piling, or other obstructions placed therein or caused by the construction of the bridge, to the satisfaction of the said district engineer, when in his judgment the construction work has reached a point where such action should be taken, ~~and in any case not later than~~ days after the bridge has been opened to traffic.

COPY SENT TO ALBANY
OFFICE *June 27/22*

RECEIVED
JUN 27 1922
COPY SENT TO ALBANY

Witness my hand this 8th day of June, 1922.

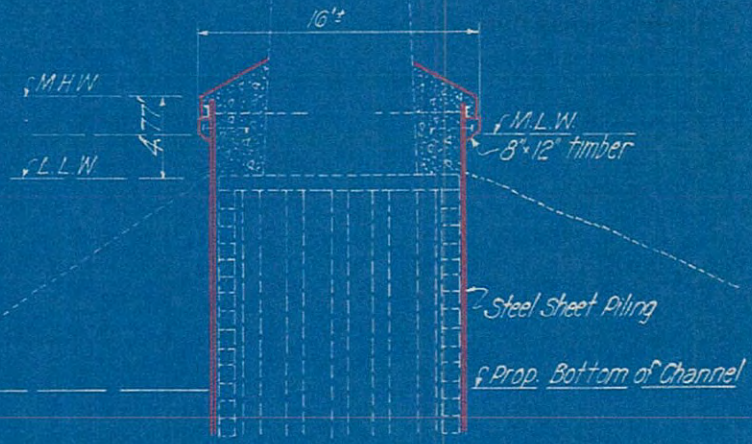
H. Taylor,
Brigadier General, Corps of Engineers,
Acting Chief of Engineers.

Witness my hand this 9th day of June, 1922.

Form No. 926
W. D., O. C. of E.
Ed. 1923-1,900

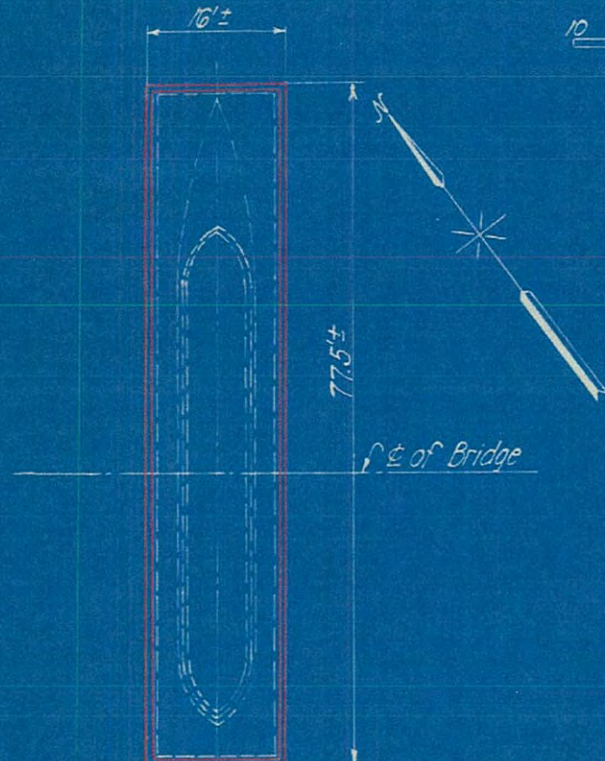
Dwight F. Davis,
The Assistant Secretary of War.

GOVERNMENT PRINTING OFFICE



SECTION OF PIER

Scale 10 5 10 ft.

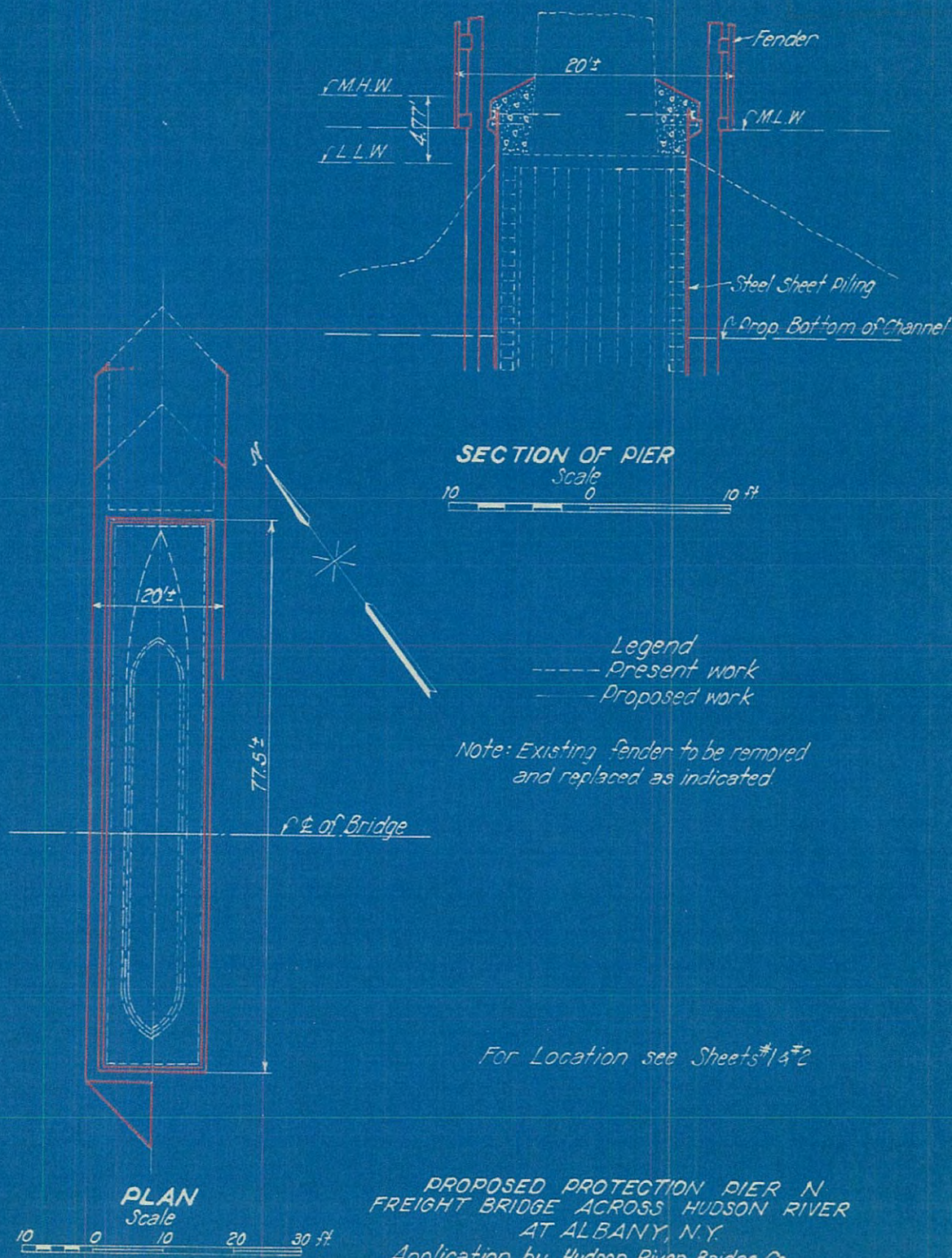


Legend
 ----- Present work
 ----- Proposed work

For Location see Sheets #1 & #2

PLAN
 Scale 10 0 10 20 30 ft.

PROPOSED PROTECTION PIERS L & M
 FREIGHT BRIDGE ACROSS HUDSON RIVER
 AT ALBANY, N.Y.
 Application by Hudson River Bridge Co.
 May 11, 1923



Matt Santo

Subject: FW: Emailing: NOAA Fisheries Service Northeast Regional Office - Habitat Conservation Division - 978-281-9332.htm
Attachments: NOAA Fisheries Service Northeast Regional Office - Habitat Conservation Division - 978-281-9332.htm; ATT00001.htm; Lou_Chiarella.vcf; ATT00002.htm

From: Lou Chiarella <Lou.Chiarella@noaa.gov>

Date: October 18, 2011 2:11:37 PM EDT

To: Rosalie Wilson <wilson@pinyon-env.com>

Subject: Emailing: NOAA Fisheries Service Northeast Regional Office - Habitat Conservation Division - 978-281-9332.htm

Rosie,

Here is our regional web site. Take a look at the links for Guide to EFH Designations, Guide to EFH Descriptions and Guide to EFH Consultations.

Lou

RECORD OF TELEPHONE CALL



Job # 50377- NYS HSR Empire Corridor
Call From Andy Labruzzo (518) 473-2460
Call To Kevin Horgan
By Kevin Horgan

Date January 4, 2012
Of NYSDOS Division of Coastal Resources
Of HNTB

Subject Discussed

Andy returned my call inquiring about the limits of the designated inland coastal waterways. I asked if there are any specific limits of the designation or if the entire river listed is considered a designated waterway and if the designation includes tributaries and outlets.

Action to be Taken

NONE

Response:

In general, the entire waterway is considered part of the “designated waterway” and it does not include tributaries. However, the designation factor has no regulatory effect. Regulatory boundaries are determined at the local level through the local community’s participation in a Local Waterfront Revitalization Program (LWRP). If a single waterway enters through multiple communities, only those waterway sections in communities with a LWRP are regulated. The exception would be if there is a community that is participating in a LWRP that includes watershed planning that may extend to adjacent communities without a LWRP. Andy mentioned that there is a plan to complete a watershed plan for all of the Mohawk River. Andy suggested that we refer to the local LWRP’s to determine regulatory requirements for the

waterways but he also noted that if we had a specific area or waterway within our project area, he could provide us with additional information for that specific area or waterway.

Addie Kim

From: dec.sm.NaturalHeritage <NaturalHeritage@dec.ny.gov>
Sent: Friday, May 7, 2021 5:25 PM
To: Addie Kim
Cc: Joe Grilli; Marissa Seifert; Jakubiak, Mark (DOT); Kenneth Wasserman; Robert Conway
Subject: RE: NYNHP Request
Attachments: read_me_NYNHP_HTNB_2021.pdf; NYNHP_HNTB_2021.zip

Addie,

Thank you for the signed agreement, and for your patience. Please find attached a zipfile with four shapefiles of Natural Heritage data from within the half-mile buffers of the Empire Corridor, as depicted in the shapefiles you provided.

New York Natural Heritage provides these GIS data to HTNB under the auspices of the just-signed data agreement. We ask that any HTNB staff or contractors accessing or using the GIS data read the agreement and be familiar with its provisions, especially the provision that the data is for the internal use of HTNB and should not be distributed externally, nor should any maps or documents revealing the precise locations of rare species be made available to the public or other parties.

Also, please delete any older versions of Natural Heritage data from your systems.

The information below is also in the attached read_me document, which also includes an explanation of the attributes.

Let me know if you have any questions, and please confirm that you have received the data.

Nick

Nicholas Conrad
Information Resources Coordinator
New York Natural Heritage Program
SUNY College of Environmental Science and Forestry
In partnership with NYS Department of Environmental Conservation
625 Broadway
Albany, NY 12233-4757
(518) 402-8944
Nick.Conrad@dec.ny.gov

Overview of NY Natural Heritage data for HTNB for the Empire Corridor, 2021

Three of the shapefiles contain the locations of rare plants and animals and of significant natural communities which are documented in the New York Natural Heritage database within the half-mile buffers around the proposed Empire Corridor route and alternate routes as delineated in the shapefiles provided in 2021. In the shapefiles, each location of a species or community is represented as one or more polygons.

The shapefile NYNHP_HTNB_**species**_2021 contains records of rare plants and rare animals last documented since 1980, for which relatively precise locations are known, and whose species identification has been confirmed.

The shapefile NYNHP_HTNB_**potential**_2021 contains records of rare species last documented before 1980 (historical records), or for which relatively precise locations are not known, or for which the most recent information indicates that the occurrence may no longer be present, or for which the species identification has not been confirmed. For historical records, there is no recent information and their current status is unknown. If suitable habitat for these species is still present, it is possible the species may still be present, too. *Records with uncertain locations, including many historical*

records, are mapped with large polygons showing the potential area within which the plant or animal was collected or observed.

The shapefile NYNHP_HTNB_comms_2021 contains records of significant natural communities. Natural community occurrences in this shapefile are considered significant from a statewide perspective, by virtue of being of excellent or good quality, and/or of a rare community type. NY Natural Heritage considers these occurrences to have high ecological and conservation value.

The above three shapefiles contain documented locations of rare species and significant ecological communities. The lack of any records at a particular location does not necessarily mean that no rare species or significant community is present there.

The fifth shapefile, NYNHP_NG_vicinity_2021, contains those sections of the half-mile buffers around the Empire Corridor routes that are within one mile of bald eagle nests, within .81 mile of Blanding's turtle locations, within 1.5 miles of timber rattlesnake locations, within 2.5 miles of Indiana bat locations, within 1.5 miles of non-wintering Northern long-eared bat locations, or within 5 miles of Northern long-eared bat hibernacula locations. (The species and distance are listed in the attribute table.) While the documented locations of these species are often not within the half-mile buffer, these species regularly travel these respective distances and may potentially occur in the portions of the half-mile buffers shown in this shapefile; these portions are within NYSDEC's area of concern for these species. Within any of these portions where there is suitable habitat for a species, the potential impacts of any activities on the species may need to be considered.

More information about many of the rare and listed animals and plants in New York, including biology, identification, habitat, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org.

Information about many of the natural community types in New York, including identification, dominant and characteristic vegetation, distribution, conservation, and management, is available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org. More technical descriptions are in Ecological Communities of New York State at <http://www.dec.ny.gov/animals/97703.html>.

From: Addie Kim <AKim@HNTB.com>

Sent: Thursday, May 06, 2021 5:03 PM

To: dec.sm.NaturalHeritage <NaturalHeritage@dec.ny.gov>

Cc: Joe Grilli <JGRILLI@HNTB.com>; Marissa Seifert <mseifert@HNTB.com>; Jakubiak, Mark (DOT) <Mark.Jakubiak@dot.ny.gov>; Kenneth Wasserman <kwasserman@HNTB.com>; Robert Conway <rfconway@HNTB.com>

Subject: RE: NYNHP Request

Thank you Nick!

Please find attached the signed agreement. Appreciate your prompt response on this!

Sincerely,

Addie

Addie Kim

Senior Environmental Planner

HNTB Corporation

31 St. James Avenue, Suite 300
Boston, MA 02116

Tel (617) 532-2326
Fax (617) 428-6905

From: dec.sm.NaturalHeritage <NaturalHeritage@dec.ny.gov>
Sent: Thursday, May 6, 2021 12:29 PM
To: Addie Kim <AKim@HNTB.com>
Cc: Joe Grilli <JGRILLI@HNTB.com>; Marissa Seifert <mseifert@HNTB.com>
Subject: RE: NYNHP Request

Hello, Addie,

I meant to send this you last week – sorry for the delay. I'll be preparing a new GIS dataset for you, and it's been a while since I last provided data to you, so it's best to execute a new data agreement.

Attached is the draft agreement (using the new template as directed by DEC's legal office). As before, the most important provisions are that the data will be for HNTB's internal use only and the data are not to be passed on to any other party (without prior approval); and that no maps or documents revealing the precise locations of rare species will be published or made available to the public or to other parties.

If you have concerns or questions about any of the provisions, let me know. If the provisions are acceptable to you, please sign and return the agreement, upon which I can send you the updated data for the Empire Corridor.

Nick

Nicholas Conrad
Information Resources Coordinator
New York Natural Heritage Program
SUNY College of Environmental Science and Forestry
In partnership with NYS Department of Environmental Conservation
625 Broadway
Albany, NY 12233-4757
(518) 402-8944
Nick.Conrad@dec.ny.gov

From: Addie Kim <AKim@HNTB.com>
Sent: Friday, April 23, 2021 4:25 PM
To: dec.sm.NaturalHeritage <NaturalHeritage@dec.ny.gov>
Cc: Jakubiak, Mark (DOT) <Mark.Jakubiak@dot.ny.gov>; Kenneth Wasserman <kwasserman@HNTB.com>; Joe Grilli <JGRILLI@HNTB.com>; Robert Conway <rfconway@HNTB.com>; Marissa Seifert <mseifert@HNTB.com>
Subject: Re: NYNHP Request

Hi Nick,

Yes, to be consistent, we'd like to request the updated data for all the alignments in order to update the assessment performed in the Tier 1 Draft EIS (so it is an apples to apples comparison).

Also I had a question regarding the proposed rare species listings in 2019, I assume that the data does not incorporate recently proposed changes in listing status (that were suspended during the pandemic)?

Thank you!

Addie

From: dec.sm.NaturalHeritage <NaturalHeritage@dec.ny.gov>
Sent: Friday, April 23, 2021 4:11:53 PM
To: Addie Kim
Cc: Jakubiak, Mark (DOT); Kenneth Wasserman; Joe Grilli; Robert Conway; Marissa Seifert
Subject: RE: NYNHP Request

Addie,
Thanks for the shapefiles!
I want to make sure I understand what you're requesting: Are you requesting updated Natural Heritage data for all alignments you provided in the shapefiles?

I can prepare a new data agreement in less than a day, and once a signed copy is returned I can provide the data as soon as I've done processing it. Let me know if I should be screening all the alignments or not, and then I will look over the data and get back to you.

Thanks,
Nick

Nicholas Conrad
Information Resources Coordinator
New York Natural Heritage Program
SUNY College of Environmental Science and Forestry
In partnership with NYS Department of Environmental Conservation
625 Broadway
Albany, NY 12233-4757
(518) 402-8944
Nick.Conrad@dec.ny.gov

From: Addie Kim <AKim@HNTB.com>
Sent: Friday, April 23, 2021 1:45 PM
To: dec.sm.NaturalHeritage <NaturalHeritage@dec.ny.gov>
Cc: Jakubiak, Mark (DOT) <Mark.Jakubiak@dot.ny.gov>; Kenneth Wasserman <kwasserman@HNTB.com>; Joe Grilli <JGRILLI@HNTB.com>; Robert Conway <rfconway@HNTB.com>; Marissa Seifert <mseifert@HNTB.com>
Subject: FW: NYNHP Request

Hi Nick,

Please see attached the GIS files for the program alternatives for the High Speed Rail Empire Corridor Program. As outlined in the prior email, 90B ("90mph design" in the attached zipfile) is the Preferred Alternative that will be the focus of the Tier 1 Final EIS, but the Tier 1 Draft EIS examined the impacts of all program alternatives. Three of these files follow the same basic alignment along Empire Corridor (90A, 90 mph, and 110 mph), although 125 mph design has an entirely new alignment.

I believe that HNTB will be the only company needed on a Data Agreement. If needed, how long would it take to institute a new Data Agreement?

Thank you, please let us know if you should have any further questions or need additional information.

Sincerely,

Addie

Addie Kim

Senior Environmental Planner

HNTB Corporation

31 St. James Avenue, Suite 300
Boston, MA 02116

Tel (617) 532-2326
Fax (617) 428-6905

Overview of NY Natural Heritage data for HTNB for the Empire Corridor, 2021

These GIS data are provided to HTNB under the auspices of the data agreement signed in 2021. We ask that any HTNB staff or contractors accessing or using the GIS data read the agreement and be familiar with its provisions, especially the provision that the data is for the internal use of HTNB and should not be distributed externally, nor should any maps or documents revealing the precise locations of rare species be made available to the public or other parties.

There are four shapefiles. The shapefiles are in meters, UTM zone 18, NAD 83.

Three of the shapefiles contain the locations of rare plants and animals and of significant natural communities which are documented in the New York Natural Heritage database within the half-mile buffers around the proposed Empire Corridor route and alternate routes as delineated in the shapefiles provided in 2021. In the shapefiles, each location of a species or community is represented as one or more polygons. See below for definitions of the attributes.

The shapefile NYNHP_HTNB_**species**_2021 contains records of rare plants and rare animals last documented since 1980, for which relatively precise locations are known, and whose species identification has been confirmed.

The shapefile NYNHP_HTNB_**potential**_2021 contains records of rare species last documented before 1980 (historical records), or for which relatively precise locations are not known, or for which the most recent information indicates that the occurrence may no longer be present, or for which the species identification has not been confirmed. For historical records, there is no recent information and their current status is unknown. If suitable habitat for these species is still present, it is possible the species may still be present, too. *Records with uncertain locations, including many historical records, are mapped with large polygons showing the potential area within which the plant or animal was collected or observed.*

The shapefile NYNHP_HTNB_**comms**_2021 contains records of significant natural communities. Natural community occurrences in this shapefile are considered significant from a statewide perspective, by virtue of being of excellent or good quality, and/or of a rare community type. NY Natural Heritage considers these occurrences to have high ecological and conservation value.

The above three shapefiles contain documented locations of rare species and significant ecological communities. The lack of any records at a particular location does not necessarily mean that no rare species or significant community is present there.

The fifth shapefile, NYNHP_NG_**vicinity**_2021, contains those sections of the half-mile buffers around the Empire Corridor routes that are within one mile of bald eagle nests, within .81 mile of Blanding's turtle locations, within 1.5 miles of timber rattlesnake locations, within 2.5 miles of Indiana bat locations, within 1.5 miles of non-wintering Northern long-eared bat locations, or within 5 miles of Northern long-eared bat hibernacula locations. (The species and distance are listed in the attribute table.) While the documented locations of these species are often not within the half-mile buffer, these species regularly travel these respective distances and may potentially occur in the portions of the half-mile buffers shown in this shapefile; these portions are within NYSDEC's area of concern for these species. Within any of these portions where there is

suitable habitat for a species, the potential impacts of any activities on the species may need to be considered.

More information about many of the rare and listed animals and plants in New York, including biology, identification, habitat, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org.

Information about many of the natural community types in New York, including identification, dominant and characteristic vegetation, distribution, conservation, and management, is available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org. More technical descriptions are in Ecological Communities of New York State at <http://www.dec.ny.gov/animals/97703.html>.

Fields in Attribute Table

Note: Element occurrences are documented, observed locations of rare plants, rare animals, rare or significant natural ecological communities, and concentration areas of groups of animal species.

EO_ID The identifier for the element occurrence in the NY Natural Heritage database.

Sensitive Data sensitive: While no NY Natural Heritage data should be made available for general public use, this field indicates whether the precise location of the element occurrence is especially sensitive and greater care should be taken to restrict its public distribution. If the value is **Y = Yes, the element is one of those considered most subject to collection and disturbance if its identity and location are publicized, and so the data are especially sensitive.**

Scien_Name Scientific name: For plants and animals, the New York State scientific name of the species. For ecological communities*, the New York Natural Heritage name of the community type. For animal concentration areas, the New York Natural Heritage name of the type of animal concentration area.

Commonname Common name: For plants and animals, the New York State common name of the species. For ecological communities and animal concentration areas, the New York Natural Heritage common name of the community type or animal concentration area, respectively.

Location The name of the site where the element occurrence is, or was, located.

Locatn_Use: Location Use: For animals, typically migratory animals, which use different areas at different times of year, the location use class indicates the specific season or behavior associated with this location; e.g., Breeding, Nonbreeding for birds; Hibernaculum, Maternity Colony, or Bachelor Colony for bats.

Group_Name The general group of animals, plants, or community types the species or community belongs to.

- NY_listed** NY State protected status: Category of legal protection under New York State Environmental Conservation Law and regulations.
For animals: Endangered, Threatened, Special Concern, No Open Season, Protected Bird, Protected by Law, Game (= has open season), or Unlisted.
For plants: Endangered, Threatened, Rare, Vulnerable (= Exploitably Vulnerable), or Unlisted.
- US_listed** Federal listing status: Listing status under the federal Endangered Species Act: Endangered, Threatened, or Candidate.

For next three fields, see also Explanation of Conservation Ranks at the end of this document.

- S_rank** The Heritage state conservation rank of the species or community.
- S_rank_dsc** A one or two-word translation of the S_Rank code in the previous field.
- G_rank** The Heritage global conservation rank of the species or community.

- Last_date** The date of the most recent observation of the element occurrence at this Location, as documented in the Natural Heritage databases. The format is most often YYYY-MM-DD.

- Comments** For species, comments about the number of individuals observed, their condition, and the condition of the habitat. For ecological communities, comments regarding the reasons for the occurrence's significance and the relative quality of the occurrence, particularly in regards to area, condition, and landscape context. The first 255 characters of the description are in the first column **Comments**; if necessary, the second 255 characters are in the second column **Comments2**. Longer values will be truncated.

- Id_confirmed** Whether the taxonomic identification of the element has been confirmed by a reliable person. Values are: Y = identification has been confirmed; ? = identification has been checked but is still uncertain; or N = identification has not been checked and needs verification.

- ERAccuracy** A measure of the level of mapping precision; values are Very High (mapped location is known to be correct to within 6 m), High, Medium, Low, and Very Low.

- Mangd_area** Managed Area: Lands managed for conservation (federal, state, local, private) on which the species or community occurs or occurred.

- County** The county(ies) in which the element occurrence is, or was, located.
- Town** The town(s) in which the element occurrence is, or was, located.

- Elem_Group** Vertebrate Animal, Invertebrate Animal, Vascular Plant, Nonvascular Plant (moss), Community, or Animal Assemblage. (Animal assemblages are multi-species animal concentration areas, such as bat hibernacula and waterfowl concentration areas).

Site_desc Site description: A description of the general area and habitat where the element occurrence is found. The first 254 characters of the description are in the first column **Sitedesc1**; if necessary, the second 254 characters are in the second column **Sitedesc2**; and, if necessary, the third 254 characters are in the third column **Sitedesc3**. Longer values will be truncated.

EXPLANATION OF CONSERVATION RANKS used by NEW YORK NATURAL HERITAGE

HERITAGE GLOBAL AND STATE CONSERVATION RANKS: Each species or community has a global and state rank as determined by the NY Natural Heritage Program. These ranks carry no legal weight. The global rank reflects the rangewide conservation status of the species or community; the state rank reflects the status within New York State.

STATE RANK:

S1 = Critically imperiled in New York State. Typically 5 or fewer occurrences, very few remaining individuals, acres, or miles of stream, or some factor of its biology making it especially vulnerable in New York State.

S2 = Imperiled in New York State. Typically 6 to 20 occurrences, few remaining individuals, acres, or miles of stream, or factors demonstrably making it very vulnerable in New York State.

S3 = Uncommon in New York State. Typically 21 to 100 occurrences, or limited acreage or miles of stream in New York.

S4 = Apparently secure in New York State.

S5 = Demonstrably secure in New York State.

SH = Historically known from New York State, but not seen in the past 35 years.

SX = Apparently extirpated from New York State.

SU = Conservation rank not assigned.

B after one of the above ranks indicates the status rank is for breeding populations only.

N after one of the above ranks indicates the status rank is for nonbreeding wintering populations only.

GLOBAL RANK :

G1 = Critically imperiled globally because of extreme rarity (5 or fewer occurrences), or very few remaining acres or miles of stream) or especially vulnerable to extinction because of some factor of its biology.

G2 = Imperiled globally because of rarity (6 - 20 occurrences, or few remaining acres, or miles of stream) or very vulnerable to extinction throughout its range because of other factors.

G3 = Either rare and local throughout its range (21 to 100 occurrences), or found locally (even abundantly at some of its locations) in a restricted range (e.g. a physiographic region), or vulnerable to extinction throughout its range because of other factors.

G4 = Apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery.

G5 = Demonstrably secure globally.

GH = Historically known, with the expectation that it might be rediscovered. GX = Species believed to be extinct.

Range ranks, e.g. S1S2, indicate not enough information is available to distinguish between two ranks.

? = a question exists about the rank. Q = a question exists whether or not the species or variety is a good taxonomic entity.

T-ranks (T1 - T5) are defined the same as G-ranks (G1 - G5), but refer only to the rarity of the subspecies or variety.



United States Department of the Interior



FISH AND WILDLIFE SERVICE
New York Ecological Services Field Office

3817 Luker Road

Cortland, NY 13045-9385

Phone: (607) 753-9334 Fax: (607) 753-9699

<http://www.fws.gov/northeast/nyfo/es/section7.htm>

In Reply Refer To:

December 20, 2021

Consultation Code: 05E1NY00-2022-SLI-0765

Event Code: 05E1NY00-2022-E-02959

Project Name: Empire Corridor

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). This list can also be used to determine whether listed species may be present for projects without federal agency involvement. New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list.

Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the ESA, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC site at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list. If listed, proposed, or candidate species were identified as potentially occurring in the project area, coordination with our office is encouraged. Information on the steps involved with assessing potential impacts from projects can be found at: <http://www.fws.gov/northeast/nyfo/es/section7.htm>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the Services wind

energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the ESA. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New York Ecological Services Field Office

3817 Luker Road
Cortland, NY 13045-9385
(607) 753-9334

This project's location is within the jurisdiction of multiple offices. Expect additional species list documents from the following office, and expect that the species and critical habitats in each document reflect only those that fall in the office's jurisdiction:

Long Island Ecological Services Field Office

340 Smith Road
Shirley, NY 11967-2258
(631) 286-0485

Project Summary

Consultation Code: 05E1NY00-2022-SLI-0765

Event Code: Some(05E1NY00-2022-E-02959)

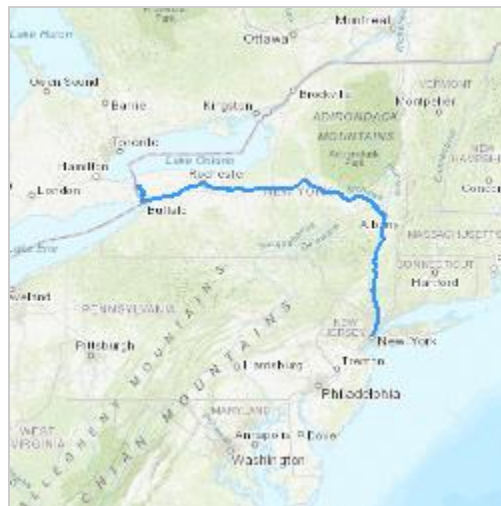
Project Name: Empire Corridor

Project Type: TRANSPORTATION

Project Description: Railroad Corridor Realignment Project

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@41.976591799999994,-73.93702339118309,14z>



Counties: New York

Endangered Species Act Species

There is a total of 7 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Indiana Bat <i>Myotis sodalis</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Piping Plover <i>Charadrius melodus</i> Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened

Reptiles

NAME	STATUS
Eastern Massasauga (=rattlesnake) <i>Sistrurus catenatus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2202	Threatened

Insects

NAME	STATUS
Karner Blue Butterfly <i>Lycaeides melissa samuelis</i> There is proposed critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/6656	Endangered
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Houghton's Goldenrod <i>Solidago houghtonii</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5219	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Appendix J CSXT and NYSDOT Agreements

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1. Framework Agreement Concerning Certain Rights and Responsibilities with Respect to New York High Speed Rail J-1
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1. Framework Agreement Concerning Certain Rights and Responsibilities with Respect to New York High Speed Rail

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CSX TRANSPORTATION, INC.

and

NEW YORK STATE DEPARTMENT OF TRANSPORTATION

**FRAMEWORK AGREEMENT CONCERNING CERTAIN RIGHTS AND
RESPONSIBILITIES WITH RESPECT TO NEW YORK HIGH SPEED RAIL**

This Framework Agreement Concerning Certain Rights and Responsibilities with Respect to New York High Speed Rail (“Framework Agreement”) is entered into as of May 28, 2010, by and between CSX TRANSPORTATION, INC. (“CSXT”), a Virginia corporation whose principal offices are located at 500 Water Street, Jacksonville, Florida, 32202, and the NEW YORK STATE DEPARTMENT OF TRANSPORTATION (“New York”), whose principal offices are located at 50 Wolf Road, Albany, NY 12205.

Introduction and Purpose

1. This Framework Agreement is to set forth and memorialize the parties’ shared understanding with respect to certain essential elements of the planning and potential implementation of enhanced intercity or high speed passenger rail service (collectively referred to herein as “high speed intercity passenger rail service”) on or adjacent to property currently owned by CSXT in the State of New York. It is the intent of the parties to recognize the national goal of expanding high speed intercity passenger rail, consistent with CSXT’s legal and fiduciary responsibilities, and to cooperate fully in achieving that goal consistent with the Framework Agreement.
2. This Framework Agreement articulates the principles for the future course of dealing between the parties concerning any implementation of high speed intercity passenger rail service in New York.
3. With regard to the project described in the Agreement for Progressing a Tier 1 Environmental Impact Statement (EIS) on the Empire Corridor, which is being executed simultaneously, this Framework Agreement is not intended to foreclose the EIS’s consideration of particular approaches. The EIS will provide a basis for determining alternatives, and by agreeing to progress the EIS, the parties are in no way committing to implementation of the project or binding themselves to any further steps concerning the project. That project and the projects identified in Attachment A are collectively referred to herein as “the Projects.” The parties agree that NYSDOT is progressing the ARRA high speed intercity passenger rail projects approved and funded by the Federal Railroad Administration and set forth in Attachment A, subject to the parties (and Amtrak, if applicable) entering into all necessary implementing project agreements.
4. Specifically, this Framework Agreement identifies four core principles that are common to all freight and passenger rail interface in the United States. Those are safety, capacity, liability and compensation. This Framework Agreement acknowledges those issues, acknowledges that there is substantial precedent for resolving them and commits the parties to work cooperatively, consistent with law and precedent to do so if the Projects are undertaken.

Safety, Capacity, Liability and Compensation

5. **Safety.** New York acknowledges that CSXT has current safety design guidelines for passenger trains operating on CSXT property at speeds higher than 90 mph between Buffalo and Hoffmans, NY that require a separated and dedicated track(s) for the passenger services constructed. New York further acknowledges that it will make every effort to follow CSXT's guidelines, or to work with CSXT to put in place other system safety improvements that result in a level of safety equivalent to or better than current CSXT guidelines, provided that in all circumstances CSXT shall have the right to make the final determination as to safe uses of its property. Although CSXT is willing to explore exceptions to its current safety design guidelines, CSXT and New York agree that any such exceptions shall be limited in number and scope, and must be mutually agreed upon by the parties. Moreover, the parties acknowledge that research and rulemaking with respect to the interface of freight and high speed rail in the United States is under study and may evolve. In all cases, and notwithstanding any other provision of this Framework Agreement, CSXT will abide by legal standards and maintain sole discretion with respect to the safety and use of its property.

6. **Capacity.** CSXT and New York acknowledge that CSXT, as a wholly-owned subsidiary of a public corporation, has the responsibility to solely determine the freight capacity that CSXT must retain to accommodate future operations. In making this determination, CSXT will take into account the results of the EIS, as well as the views of third parties, including, without limitation, the Federal Railroad Administration, the State of New York, Amtrak, the Port of New York/New Jersey and customers.

7. **Liability.** New York acknowledges that if the Projects are implemented, CSXT will require adequate protections from potential liability arising from the operation of passenger rail service, consistent with law and precedent.

8. **Compensation.** New York acknowledges that the CSXT corridor that is the subject of this Framework Agreement is today the single busiest on the CSXT network and has tremendous opportunity for additional freight demand, including from the expansion of the Panama Canal. Accordingly, the property that would be impacted by the Projects is among the most valuable freight corridors in the United States. New York acknowledges that it has a legal and constitutional obligation to justly compensate CSXT for any of its property rights acquired or used by New York, as well as for any diminishment in value of those rights to the extent permitted by law.

This Agreement has the concurrence of the authorized officials of both parties as of the dates show below.

CSX TRANSPORTATION, INC.

A handwritten signature in black ink, reading "Louis E. Renjel, Jr." in a cursive script.

Louis E. Renjel, Jr.
Vice President, Strategic Infrastructure

NEW YORK STATE DEPARTMENT OF TRANSPORTATION

A handwritten signature in black ink, reading "Stanley Gee" in a cursive script.

Stanley Gee
Acting Commissioner

ATTACHMENT A

1. HSR — The Albany-Schenectady Double Track (110 mph corridor as per FRA grant application);
2. Grade Crossing — The Highway-Rail Grade Crossing Safety Improvements, CSXT Hudson Line;
3. Station improvements — The Rochester Station Improvements;
4. Station improvements — The Buffalo-Depew Station Improvements; and
5. HSR — Phase I of the 3rd Track Initiative.

2. Agreement for Progressing a Tier 1 Environmental Impact Statement on the Empire Corridor

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CSX TRANSPORTATION, INC.
And
NEW YORK STATE DEPARTMENT OF TRANSPORTATION
AGREEMENT
FOR PROGRESSING A

TIER 1 ENVIRONMENTAL IMPACT STATEMENT ON THE EMPIRE CORRIDOR

This Agreement for Progressing an Environmental Impact Statement ("EIS Agreement") is entered into as of May 28, 2010, by and between the NEW YORK STATE DEPARTMENT OF TRANSPORTATION ("NYSDOT" or "State"), whose principal offices are located at 50 Wolf Road, Albany, NY 12205, and CSX TRANSPORTATION, INC. ("CSXT"), a Virginia corporation whose principal offices are located at 500 Water Street, Jacksonville, Florida 32202.

Explanatory Statement

- A. The purpose of this EIS Agreement is to set forth principles of cooperation between the parties in connection with undertaking a Tier 1 Service Level National Environmental Policy Act ("NEPA") Environmental Impact Statement ("EIS") to consider the enhancement of high speed intercity passenger rail service between Niagara Falls, N.Y. and Albany, N.Y. with through or connecting service to Pennsylvania/Moynihan Station in New York City ("the Corridor") and other possible destinations, consistent with preserving and growing the valuable freight service and opportunities of CSXT and its stakeholders with respect to its property.
- B. The EIS will provide a basis for determining alternatives with respect to the basic engineering, design, and environmental impacts of the project described above. Concurrent with the execution of this EIS Agreement, the parties are executing a Framework Agreement Concerning Rights and Responsibilities ("Framework Agreement") that provides an overview of certain essential rights and responsibilities of the parties with respect to this project and others.
- C. New York State has a vital interest in delivering high speed intercity passenger rail to the Corridor and is dedicated to optimizing train speed in the Corridor in ways that will best serve the public's need and desire for safe and reliable passenger rail service while at the same time supporting and growing the substantial public benefits of freight rail in New York.
- D. CSXT, as a wholly-owned subsidiary of a public corporation, has legal and fiduciary responsibilities to preserve and grow freight rail services and to maximize the safe and efficient uses of its property.
- E. NYSDOT is presently undertaking the development of a Tier 1 Service Level National Environmental Policy Act Environmental Impact Statement, with the Federal Railroad Administration ("FRA") as the lead agency, to consider the enhancement of high-speed intercity passenger rail service on the Corridor including the introduction of enhanced operations on that portion of the Corridor between Albany-Rensselaer, Schenectady and

Niagara Falls, New York (the “Empire Corridor West” or “ECW”). The EIS will study possible additions and/or enhancements to track and other infrastructure to allow for intercity passenger rail trains that are capable of traveling at maximum authorized speeds of at least 110 miles per hour (“mph”) as defined by 49 U.S.C. section 26106(b)(4), as well as other enhancements. The parties recognize that the CSXT right of way within the Corridor is the single busiest on the CSXT network. As such, it is an essential part of an interdependent nationwide rail network and is among the most valuable freight routes in the United States. The parties recognize that the alternatives studied may require the acquisition of property rights from CSXT or others. As required by NEPA, the EIS will evaluate all reasonable alternatives including options that comply with CSXT’s design and safety standards, guidelines and policies for commingled passenger and freight operations, including the requirement of a separated and dedicated track for any passenger trains operating at speeds in excess of 90 mph, with a minimum of 30 feet measured from the center line of the freight track to the center line of the proposed passenger track. The EIS will also evaluate a no-build alternative, and will consider the substantial stakeholder interests in freight fluidity, including without limitation the interests of the Port of New York/New Jersey and the City of New York. In evaluating those alternatives that comply with CSXT’s design and safety standards, guidelines and policies, the parties understand that there may be places along the Corridor where meeting CSXT’s standards, guidelines and policies is not possible within CSXT’s existing right of way; therefore, the EIS will evaluate other options including, but not limited to:

- speed restrictions
- environmental mitigation
- exceptions to CSXT’s standards, guidelines and policies
- property acquisition

- F. The EIS will draw upon: (1) a market study of ridership demand for such services on the Corridor (the “Market Study”); (2) an operational analysis of the Corridor previously undertaken by NYSDOT and others for railroad operations between Schenectady, Poughkeepsie and New York, NY (the “Hudson Line Operational Analysis”), which resulted in the Hudson Line Corridor Rail Transportation Plan and its preferred scenario of capital improvements dated November 2005 (the “Hudson Line Study”); and (3) additional operational analysis of the Corridor between Schenectady and Niagara Falls, NY (the “ECW Operations Analysis”). The EIS, the Market Study and the ECW Operational Analysis are referred to collectively as the “Study”.
- G. CSXT, as the owner of much of the right of way within the scope of the Study, is willing to assist NYSDOT in connection with the Study, under the terms set forth by this EIS Agreement.
- H. The parties understand that the Study will form the basis for the development of a Transportation Investment Plan (“TIP”), to be prepared generally consistent with the guidance previously published by FRA entitled “Corridor Transportation Planning Guide.” The TIP will identify the infrastructure and/or operational improvements necessary to permit safe and reliable intercity passenger rail service consistent with the concomitant public interest in the preservation and enhancement of safe and reliable rail freight operations between Buffalo, N.Y. and Selkirk, N.Y. for both existing and future freight customers along the line and through freight service, including service to and from the Port of New York/New Jersey. The development of a TIP will be the subject of a further agreement between the

parties as to their roles and responsibilities. Negotiation of the TIP agreement will begin immediately upon the execution of this EIS Agreement.

- I. The parties understand that the National Railroad Passenger Corporation (“Amtrak”) provides intercity passenger rail service on the Corridor and will be a necessary participant in the undertaking of the Study. The negotiation of the TIP, including responsibility of operations and maintenance of capital improvements will include Amtrak.

Section 1: General Matters

- a. The provisions of this EIS Agreement shall not be determinative of the terms and conditions of any further agreements between the parties as to the implementation of the improvements or the rail service that are derived from the Study. The results of the Study do not, and will not bind either party to any terms or conditions related to the contemplated project, including any expansion of passenger rail operations or infrastructure changes to CSXT's rail corridors. The parties acknowledge that further studies may be necessary and desirable to the extent that the Study does not sufficiently address the impact of rail service and/or the rail infrastructure enhancements required to accommodate the same. NYSDOT and CSXT acknowledge and understand the obligations contained in this EIS Agreement are limited to developing the Study, in accordance with this EIS Agreement. This EIS Agreement creates no obligation on the part of either party to otherwise pursue or advance any particular project or to enter into any further agreements to advance such projects.
- b. This EIS Agreement will commence on the date signed by the parties and terminate when the Study is completed and accepted by the FRA. Either party may terminate its participation in the Study by delivery of 30 days prior written notice to the other, stating the reasons for such termination.

Section 2: NYSDOT Consultants and Subconsultants

NYSDOT has secured the services of HNTB New York Engineering and Architecture, P.C., as well as sub-consultants Louis T. Klauder & Associates and W. F. Keeney & Associates at its sole expense (collectively, “NYSDOT Consultants”), to perform the Study and to develop alternatives that best meet the future needs of the users of the Corridor. The term of the NYSDOT – HNTB New York Engineering and Architecture, P.C. Railroad Retainer Agreement is 3/01/2010 to 3/01/2015. It is expected that the Study will be completed in 2012.

Section 3: Operations Analysis Parameters and Methodology.

- a. The objective of the Study's ECW Operations Analysis is to provide a comprehensive analysis of proposed alternatives for improving rail service on the ECW that connects Albany-Rensselaer Station with Syracuse, Rochester, Buffalo and Niagara Falls, including important connections west of Buffalo and north of Syracuse. Also included is the important connection from Hoffmans (where the ECW continues east to Albany-Rensselaer Station) to Selkirk Yard, the major rail freight classification yard for New York and New England.
- b. The Study's ECW Operations Analysis will include a comprehensive computerized railroad network simulation model of both existing and future train operations on the

ECW from Albany-Rensselaer to the Canadian border in Niagara Falls, NY. The Rail Traffic Controller (“RTC”) computer rail network simulation analysis package shall be used for the Study’s ECW Operations Analysis.

- c. Development of the Base simulation model, reflecting 2008 ECW operations, was substantially completed as part of another project and has already received preliminary “sign off” by CSXT conditioned on correction of some deficiencies in the model identified by CSXT which NYSDOT has agreed to implement. A Base Case RTC validation will be completed using CSXT actual point to point data. Some work is needed to provide a broader set of outputs to support the Study. The Base simulation model will not be updated to reflect current operations on the Corridor because CSXT train volumes were higher in 2008 than they are at present.
- d. The Study’s ECW simulation model will include detailed simulation of all intercity passenger trains and freight rail movements (both local and long distance) within the ECW.
- e. The Study’s future ECW simulation model scenarios will reflect evaluation of Study alternatives that include growth in passenger and freight rail service as well as required infrastructure improvements. Feasibility assessments of alternatives with significant infrastructure improvements will balance costs and environmental impacts with predicted rail network operational benefits related to capacity, travel time, train schedule reliability, rail safety, and cost effectiveness.
- f. The Study’s ECW Operations Analysis will include the following CSXT trackage that is part of the Corridor and connecting rail routes:
 - Portion of CSXT’s Hudson Subdivision: Rensselaer (CP 142) to Schenectady (CP 160) and Hoffmans (CP 169),
 - CSXT’s Selkirk Subdivision [Selkirk Yard to Hoffmans (CP 169) junction with the Hudson Subdivision) and Amsterdam (CP 175)],
 - CSXT’s Mohawk Subdivision [Amsterdam (CP 175) to St. Lawrence Subdivision Junction (CP 291) and Syracuse (SP 296)],
 - Portions of CSXT’s St. Lawrence Subdivision/Former Montreal Secondary [Syracuse (CP 291) to Woodard (CP-W),
 - CSXT’s Rochester Subdivision [Syracuse (CP 296) to Buffalo (CP 429)],
 - CSXT’s West Shore Subdivision [Fairport (CP 359) to Chili (CP 382)] which provides an important freight bypass around Rochester,
 - CSXT’s Buffalo Terminal Subdivision [Buffalo (CP 429) to CP 437 and Lake Shore Subdivision (CP 2)],
 - CSXT’s Niagara Subdivision, [Buffalo (CP 437) to Niagara Falls junction with CPR and CN (CP 28)], and

- Additional trackage in the Buffalo Terminal area – the Belt Line, Frontier Yard (lead tracks only), International Bridge and Old Compromise Line.

In all cases where trains can enter or leave the ECW territory "at speed" (using power switches), the Study's EIS Operations Analysis territory shall be extended so as to support this type of simulation operation. Where distant (approach) signals are provided – typically one to two miles from the ECW junction point – they shall be included in the operations analysis territory. Where replacement of hand-throw switches with power switches is identified as a potential improvement in the ECW territory, the "before and after" analysis shall be conducted starting at least one mile from the ECW junction point.

Where freight yard operations impact the ability of trains to achieve mainline Maximum Authorized Speed (MAS), ECW route yard tracks, including arrival/departure tracks, will be represented in the network description.

- g. With direct input and participation of CSXT, the Study will evaluate multiple alternatives that feature different passenger service levels, a range of future rail service levels, and capital improvements to existing CSXT infrastructure, capital improvements to new infrastructure within the CSXT right of way and capital improvements to new infrastructure partly or wholly outside of the CSXT right of way. The Study will identify a preferred alternative that provides the greatest benefits for safe and efficient rail operations, freight rail customers and the traveling public, while controlling capital costs and minimizing environmental impacts. To the extent possible, impacts of the impending implementation of Positive Train Control will be included.
- h. The Study's ECW Operations Analysis will use 2035 as future year for evaluation of rail operations. The Study's ECW Operations Analysis will provide the basis for a Service Development Plan that outlines how capital improvements and increased rail operations will be phased over time, given capital funding constraints, construction timeframes and the need to maintain fluid rail operations on the ECW at all times.
- i. Each RTC simulation model run will simulate seven consecutive measured operating days across the ECW plus one day warm up and one day cool down with randomization.
- j. The NYSDOT Consultant shall provide CSXT with all completed RTC Case (database) files, including the version of the RTC software used in the simulation. CSXT may run additional simulations for longer durations and alternative randomization inputs. At the discretion of CSXT, CSXT may provide the NYSDOT Consultant with the network simulation output data and/or summary document and the NYSDOT Consultant will incorporate CSXT's inputs into the Study's EIS technical appendices, as applicable.

Section 4: Study Management Approach

- a. NYSDOT and NYSDOT Consultants have entered into an agreement that outlines the Scope of Work for the Study, including roles and responsibilities of each participant. NYSDOT will manage the overall effort, including assigning a contract manager for the administration of the consultant services. NYSDOT will assign appropriate technical and managerial staff, as required, to manage or direct the advancement of the Study.

- b. FRA is the lead federal agency for purposes of the Study and under federal law is responsible for the scope and content of the EIS. The parties recognize that the independence and integrity of the EIS is essential to the development of a sound document and that, as it does for all of its EISs, the FRA will play a lead role in determining the scope and content of the document.
- c. CSXT (pursuant to this EIS Agreement), the National Passenger Railroad Corporation (Amtrak), FRA and other governmental agencies will provide technical guidance and support to NYSDOT and NYSDOT Consultants.

Section 5: Study Coordination

- a. In order to progress the Study, NYSDOT Consultants will need to perform field reconnaissance such as (but not limited to) measuring track centers, reviewing locations along the right-of-way for possible historic structures, wetlands and other constructability concerns, identifying bridge abutment setbacks and other design constraints affecting the ability to add new trackage. CSXT agrees to provide access to railroad property for Study purposes subject to the conditions set forth in this EIS Agreement. NYSDOT Consultants will be responsible for obtaining and paying all fees for Right-of-Entry Permits from CSXT, including but not limited to: providing the applicable general liability and railroad protective liability insurance, executing the acknowledgement statements contained on the permits, participating in railroad-sponsored safety training and making arrangements for obtaining any required railroad flagging services. It is anticipated that NYSDOT Consultants will perform field reconnaissance trips over the life of the Study. NYSDOT or its consultants will bear all CSXT costs related to the field reconnaissance trips.
- b. NYSDOT Consultants will provide CSXT with sufficient advance notice, usually no less than 14 days, when they desire to gain access to railroad property for the purpose of performing field reconnaissance. The timing of any field reconnaissance trips will depend upon the availability of CSXT personnel to protect those entries onto CSXT property.
- c. NYSDOT Consultants will group their requests for access to railroad property into geographically-compatible groupings in order to maximize efficient access to the Corridor (grouping nearby locations within one railroad Subdivision). NYSDOT Consultants will be required to execute a non-disclosure agreement with CSXT for all information deemed confidential by CSXT. CSXT agrees to provide reasonable requested Corridor source information in a timely manner.
- d. CSXT will provide certain available engineering drawings and maps, to the extent practicable and to the extent not previously provided to NYSDOT, for use by NYSDOT and NYSDOT Consultants in development of the Study. These drawings may include track charts, real estate valuation maps and other documents mutually agreed by the Parties.
- e. Any information provided to NYSDOT will be subject to disclosure under the Freedom of Information Law, unless the information is confidential financial statements, balance sheets, trade secrets or revenue and cost projections that CSXT can demonstrate is

exempt from disclosure under the New York State Freedom of Information Law, the federal Freedom of Information Act, the federal Interstate Commerce Act or other laws administered by the Surface Transportation Board or the Federal Railroad Administration, and CSXT makes a timely request for exemption from disclosure in accordance with such laws.

Section 6: Notices

All notices and Certificates of Insurance shall be mailed to the following addresses:

A. To CSXT:

(1). Certificates of Insurance:

Walter D. Tyler
Insurance Department
CSX Transportation
500 Water Street (J150)
Jacksonville, FL 32202

(904) 366-5090/ Fax (904) 245-2203

(2). All Notices and Communications pertaining to this Statement:

Evan Bell
Director Operations Planning
CSX Transportation
500 Water Street (J315)
Jacksonville, FL 32202

(904) 359-1801 / Fax (904) 359-5433

B. To NYSDOT:

Marie Corrado
Director of Major Projects
New York State Department of Transportation
50 Wolf Road, 6th Floor
Albany, NY 12232

(518) 485-5025 / Fax (518) 457-4190

This EIS Agreement has the concurrence of the authorized officials of both parties as of the dates shown below.

CSX TRANSPORTATION, INC.

A handwritten signature in black ink, reading "Louis E Renjel". The signature is written in a cursive, flowing style.

Louis E. Renjel, Jr.
Vice President, Strategic Infrastructure

NEW YORK STATE DEPARTMENT OF TRANSPORTATION

A handwritten signature in black ink, reading "Stanley Gee". The signature is written in a cursive, flowing style.

Stanley Gee
Acting Commissioner

High Speed Rail Empire Corridor

Tier 1 Final Environmental Impact Statement Volume 5



Department of
Transportation



U.S. Department of Transportation
Federal Railroad Administration

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High Speed Rail Empire Corridor Program Tier 1 Final Environmental Impact Statement

This Tier 1 Final Environmental Impact Statement (EIS) consists of five volumes:

Volume 1 Environmental Impact Statement, which includes:

- Executive Summary
- Chapter 1, Introduction and Purpose and Need
- Chapter 2, Existing Transportation Conditions and Major Markets
- Chapter 3, Alternatives
- Chapter 4, Social, Economic, and Environmental Considerations
- Chapter 5, Financial Capacity
- Chapter 6, Comparison of Alternatives
- Chapter 7, Comments and Coordination
- References, Acronyms, Glossary of Terms, and List of Preparers

Volume 2 Appendix A - Track Schematics

Track schematic (11"x17") plans of the Base Alternative and four Build Alternatives

Volume 3 Appendices B through H

- Appendix B Ridership and Revenue Forecasting
- Appendix C Alternatives Development and Screening Report
- Appendix D Rail Network Operations Simulation
- Appendix E Existing Transportation Conditions Supporting Documentation
- Appendix F Capital, Operating, and Maintenance Costs Estimating Methodology
- Appendix G Environmental Inventory and Impact Assessment
- Appendix H Service Development Plan

Volume 4 Appendices I through J

- Appendix I Agency Correspondence
 - Cooperating Agencies Correspondence
 - Participating Agencies Correspondence
 - Agency Notification Correspondence
- Appendix J CSXT and NYSDOT Agreements

Volume 5 Appendix K

- Appendix K Responses to Comments on the Tier 1 Draft EIS

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Appendix K Responses to Comments on the Tier 1 Draft EIS

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Commenter	Bullock, Doug, Committee Chair of Mass Transit, Albany County Legislator
Comment E-1-1	<p>In September of 2012, the Albany County Legislature passed a resolution in support for restored Bicycle and Pedestrian accommodations on a rebuilt Livingston Avenue Bridge. The County has made significant investment to provide residents and visitors with an attractive, safe, inviting, and healthy network of trails and open spaces along the Hudson River Waterfront. Each day thousands of County residents use the waterfront as a place to play, exercise, and enjoy the scenery of the Hudson River shore. The County has made significant investment to build and maintain the Corning Preserve Bike Hike Trail, and in the near future the County anticipates cutting the ribbon on a 9-mile trail from the Port of Albany west to Voorheesville. This trail could one day connect to the Corning Preserve and via the Bridge, connect to trails planned for Rensselaer County. For decades the Corning Preserve has been a centerpiece of downtown activity and tourism, yet, it is difficult and harrowing for those on bike, foot, or in a wheelchair to cross the river. The replacement of the Livingston Avenue Bridge provides an opportunity to create a more attractive, safer, and more enjoyable non-motorized connection the waterfront on both sides of the river. The existing walkway once provided this access. With a new bridge comes the opportunity for a new, 21st century walkway. Not completing the walkway during the overhaul today, could mean an expensive retrofit down the road--or worse--no future accommodation. Potential conflicts between rail traffic and walkers & bicyclists can be eliminated with proper engineering of the facility. The new bridge should carry on the County's commitment to provide excellent bike and pedestrian facilities to our residents and visitors.</p>
Response	<p>Thank you for your comments and support for the upgrade of the Livingston Avenue Bridge. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. Including accommodations for pedestrians and bicyclists on the Livingston Avenue Bridge would be addressed as part of the Livingston Avenue Bridge Project. For more information on the Livingston Avenue Bridge, please visit the LAB project website: https://www.dot.ny.gov/display/projects/livingstonavebridge</p>
Commenter	Bullock, Doug, Committee Chair of Mass Transit, Albany County Legislator
Comment E-1-2	<p>The bridge is located in an area of the City of Albany suffering from extreme poverty and high unemployment. This project should be considered an environmental justice issue. What benefit will it provide for historically underserved populations of the county that will feel the greatest impact from its construction and operation? Albany County's support and the benefits of the Walkway must be acknowledged in each and every one of the alternative scenarios put forth in the Empire Corridor DEIS. Furthermore, the report should perform a Title VI and Environmental Justice Analysis of the each of the potential scenarios</p>
Response	<p>Your concerns, relating to environmental justice, are recognized and will be addressed in the Tier 2 assessments. The EA will include a more detailed analysis, including a Title VI/EJ analysis, that would be performed as part of required environmental documentation.</p>
Commenter	Bullock, Doug, Committee Chair of Mass Transit, Albany County Legislator
Comment E-1-3	<p>My name is Doug Bullock, I'm an Albany County Legislature, Chair of the Mass Transit Committee in Albany County and I support the Livingston Avenue Bridge with a ramp, which is really important for connectivity in Albany.</p> <p>The County is building a new rail-trail coming down from Bethlehem to South Pearl Street, eventually to connect up to the trail along the Hudson River, and that trail can be an extension of the Livingston Avenue Bridge and it's very important that you connect with the</p>

community. Not only that aspect, but the aspect of transportation to the rail station in Rensselaer will become a lot easier with a walkway slash bikeway on that bridge and we could have the possibility of alternative transportation directly to the train station, The Albany County Legislator signed a proclamation.

A majority of people on the legislature, a majority of legislatures said we want 28 out of the 39. We want a pedestrian walkway on that Livingston Avenue Bridge.

Response Thank you for your comment on the Livingston Avenue Bridge Project. Please refer to our response to your earlier comment (E-1-1).

Commenter **Bullock, Doug, Committee Chair of Mass Transit, Albany County Legislator**

Comment E-1-4 One thing I want to emphasize and I think it's absurd that you're calling it a high speed rail period.
It's a lot faster, but it's really important that we have a dedicated passenger rail. That is very important, and at the highest speed possible. Seventy-seven miles per hour is barely going to compete with an automobile speed.
So let's face it, we got to do better.

Response Your comment was considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. The purpose of the High Speed Rail Empire Corridor Program is to improve the reliability, frequency, trip times and passenger amenities for intercity rail passenger service between New York City and Niagara Falls. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight traffic and will reduce travel times between New York City and Niagara Falls by 1 ½ hours in 2035, compared to the Base Alternative.

Commenter **Fahy, Patricia, Member of Assembly, 109th District, NYS Assembly**

Comment E-2-1 Walkway on the Livingston Avenue Railroad Bridge. This Walkway, though inaccessible for many years, is an invaluable resource enabling pedestrians and bicyclists to cross the Hudson River for both work and recreation. Restoration and repair of the Walkway will improve bicycling and pedestrian access without impeding rail traffic. The bridge itself has reached the end of its lifespan and the bridge is slated to be completely reconstructed in 2017 as part of New York State's High Speed Rail initiative. It is essential that reestablishment of the Walkway be part of the plan to replace the bridge.
Restoration of the Walkway will aid in the establishment of a multi-modal transportation network connecting urban centers across the Hudson River. This corresponds to the emphasis on creating "complete streets" and ensuring safe access for people using all modes of transportation, including pedestrians and bicyclists. The restored access is highlighted in several state and federally funded plans including the Albany 2030 Comprehensive Plan (2011), the Albany Bike Master Plan (2009), and the Patroon Creek Greenway Plan (2004). Restoration of the Walkway is a significant Title VI and environmental justice issue. Neighborhoods in the vicinity of the bridge are low income and have high unemployment with a high percentage of families living below the poverty level. These families are more likely than not to need the low or no cost pedestrian and bicycle access on a daily basis that the Walkway would provide. These same families would bear the brunt of any increased noise and emissions created by the High Speed Rail.
This investment in infrastructure to restore the Walkway has additional benefits that include increases in physical fitness activity, tourism, reduced traffic congestion and travel time, safer streets and cleaner environment. The City of Albany hopes to invest \$11 million in upgrades to the Corning Preserve waterfront park, including a new covered stage for events like Alive at Five, a restaurant, kayak launch, bike path improvements, cafe and boat docks. The Walkway is a natural extension to these and other recreational activities along the Hudson.

Reestablishment of the Walkway is an essential part of the New York State High Speed Rail initiative and has my full support.

Response Thank you for your comments regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. Including accommodations for pedestrians and bicyclists on the Livingston Avenue Bridge would be addressed as part of the Livingston Avenue Bridge Project. For more information on the Livingston Avenue Bridge, please visit the LAB project website:
<https://www.dot.ny.gov/display/projects/livingstonavebridge>

Commenter Magnarelli, William B., Member, 129th District, NYS Assembly

Comment E-3-1 I am writing to add my comment on the proposed High Speed Rail Empire Corridor Program. I wanted to add my support to this effort. I believe the expansion of high speed rail service in New York will provide needed economic development and better connect our Upstate communities to New York City. I would like it noted that I support the "Alternative 125" proposal that would provide service at a speed of up to 125 mph. I believe that high speed rail expansion is important to the future of New York State and especially Upstate New York. Traveling from Syracuse to New York City can be a very expensive and time consuming experience. According to the DOT's estimates, the "Alternative 125" plan could shorten the travel time by rail from Syracuse to NYC by approximately two hours. Shortening this travel time would make it easier for NYC residents to travel Upstate, especially those that don't own cars. I also believe it would further the Governor's goal of encouraging people from NYC to visit and enjoy our Upstate communities.

Response Thank you for your comments in support of the High Speed Rail Empire Corridor Program, and the 125 Alternative. Comments from elected officials were an important part of the selection process for the Preferred Alternative. In selecting Alternative 90B as the Preferred Alternative for the High Speed Rail Empire Corridor Program, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts. Alternative 90B would also shorten the trip from New York City to Niagara Falls by 1½ hours. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative). A substantial drawback of Alternative 125 is that it would take the longest time to construct and would be the costliest alternative.

Commenter Brindisi, Anthony, Member of Assembly, NYS Assembly

Comment E-4-1 I am writing to you in strong support of the development of a high-speed rail plan along the existing Empire Rail Corridor that would include regular service to and from the Utica and Rome train stations. In recent years, passenger rail ridership from the Utica and Rome train stations is up significantly. However, one of the major issues I hear about often is the reliability of service from the Mohawk Valley to other parts of the state. Currently, the on-time performance of passenger trains on the Empire Corridor is only about 83 percent. Developing high-speed rail service would boost service reliability to well over 90 percent. This would be in addition to the significant reduction in travel time from Utica to other locations on the corridor from high-speed service. Developing a reliable high speed rail system is especially important as the economy of the Mohawk Valley region continues to move forward. By year's end, construction is expected to be complete on the 'Quad C' building which will anchor the new NanoUtica project on the campus of SUNYIT near Utica. Within several years, 1,500 people will be working on

research and development projects at this new nanotechnology center. Rome will soon be the site for one of six federal facilities testing commercial drone flights. I am confident that rail ridership will increase significantly because of new projects in our region, if fast, reliable train service is available.

Separating passenger rail and freight rail lines would not only benefit travelers, but would also encourage more use of freight lines. Both would significantly reduce the use of fossil fuels and of highway congestion. Developing high-speed rail in New York will benefit businesses, encourage tourism, and help the environment. But I would like to emphasize that I will only support a high-speed rail alternative that includes regular passenger rail service from the Utica and Rome train stations.

Response Comments from elected officials were an important part of the selection by NYSDOT and the FRA of Alternative 90B as the Preferred Alternative. As noted in the Tier 1 FEIS, Alternative 90B would double the service frequency along Empire Corridor West for the service leg that includes Utica and Rome. Alternative 90B would result in the best on-time performance for Amtrak service in 2035 of all of the alternatives considered and would increase ridership by 1 million over the Base Alternative. .

Commenter Young, Gregory, Board of Supervisors, Fulton County

Comment E-5-1 Even though neither the current nor any of the proposed Amtrak services directly reach Fulton County, there is service in nearby Montgomery County via the Amsterdam Station. Passenger rail is an important connecting linking our area with the rest of the state. For this reason, I enthusiastically support the Base Alternative, Alternative 90A, Alternative 90B, and Alternative 110. However, I'm opposed to Alternative 125 because this plan would not only exclude the Amsterdam Station, but also the two next stations at Schenectady and Rome as well, meaning that the closest station for residents of this region would be over an hour away. Indeed, this would have the greatest impact on individuals who do not own automobiles, since they have the greatest need for high-speed rail, yet would lack access to it by virtue of being unable to get to a station.

Response Thank you for your comments in support of maintaining passenger rail service to Amsterdam, Schenectady and Rome. Under the Preferred Alternative, Alternative 90B, rail service would continue with more frequent and faster service to Schenectady, Amsterdam, Utica, and Rome. Alternative 125 has not been selected as the Preferred Alternative.

Commenter Young, Gregory, Board of Supervisors, Fulton County

Comment E-5-2 In terms of fiscal cost, I support Alternative 110 since it has the lowest subsidy per rider at only \$9.

Response Thank you for your comments in support of Alternative 110. NYSDOT and FRA have selected Alternative 90B as the Preferred Alternative. Although Alternative 110 has the lowest subsidy, the subsidy for the Preferred Alternative (Alternative 90B) would be \$13 per rider, which would be lower than both Alternative 125's subsidy per rider of \$14 and the Base Alternative's subsidy per rider of \$17 per rider. Alternative 90B's costs would also be less than that for Alternative 110. Its capital cost would be \$720 million (or 12%) less than that for Alternative 110, and annual operating and maintenance costs would be \$2 million lower than for Alternative 110.

Commenter Stammel, Michael and Breselor, Judith,, Legislator, District 6 and District 4, Rensselaer County Legislature

Comment E-6-1 We are in full support of the objectives of the high speed rail project and the improvements that the project will bring to our current rail system.

Response	Thank you for your comment on the High Speed Rail Empire Corridor Program. The goals of the program are to improve reliability, trip times, passenger amenities and frequency of service. Comments from elected officials and the public in support of the High Speed Rail Empire Corridor Program have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Stammel, Michael and Breselor, Judith,, Legislator, District 6 and District 4, Rensselaer County Legislature
Comment E-6-2	<p>We are advocating for the restoration of the walkway on the historic Livingston Avenue Bridge as a part of any project alternative considered by the New York State Department of Transportation (NYSDOT). A restored Livingston Avenue Bridge walkway would allow for pedestrian and cyclist traffic between Albany and Rensselaer, providing much safer transport than the Dunn Memorial Bridge located to the south. The walkway would further benefit residents, encourage tourism and enhance the local economies of surrounding areas. We believe that the success of the Walkway Over the Hudson, the transformation of the Poughkeepsie-Highland Railroad Bridge, can be emulated with the restoration of the Livingston Avenue Bridge. Furthermore, in 2011, Governor Cuomo signed the Complete Streets Act, which urges consideration of the convenience and mobility of all users when designing transportation projects. A restored Livingston Avenue Bridge would fall in line with the spirit and vision of the Complete Streets Act and further New York State's commitment to a sustainable future.</p> <p>Local support for the walkway has, and continues to be widespread. The Rensselaer County Legislature, The City of Rensselaer, Albany County, Albany Common Council, The Hudson River Greenway and the Greenway Conservancy have all passed resolutions in support of a restored walkway.</p> <p>We believe that if the walkway is not constructed during the current high speed rail project, then increased costs to add a walkway after the project completion would prove to be too expensive and perhaps render the project unworkable. We implore NYSDOT to consider the economic and environmental benefits that the walkway would afford the communities of Rensselaer and Albany as well as the groundswell of support for improved waterfront access and sustainable transportation.</p>
Response	<p>Thank you for your comments in support of the upgrade of the Livingston Avenue Bridge. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. Including accommodations for pedestrians and bicyclists on the Livingston Avenue Bridge would be addressed as part of the Livingston Avenue Bridge Project. For more information on the Livingston Avenue Bridge, please visit the LAB project website:</p> <p>https://www.dot.ny.gov/display/projects/livingstonavebridge</p>
Commenter	Stammel, Michael, Legislator, Rensselaer County Legislature
Comment E-7-1	<p>I am writing to convey my support for incorporating a restored pedestrian and bicycle walkway on the Livingston Avenue Bridge over the Hudson River between the cities of Rensselaer and Albany. A walkway was an important component for generations of this historic bridge, and a restored walkway will again ensure the Livingston Avenue Bridge is a vital part of the Capital Region.</p> <p>A new pedestrian and bicyclist walkway on the Livingston Avenue Bridge will strengthen connections between communities in the area and significantly boost tourism efforts, as well as expand recreational opportunities for residents. The walkway will also help showcase the Hudson River and access to this outstanding waterway.</p> <p>Recent media reports have noted the lack of pedestrian and bicycle access over the Hudson.</p>

The reopening of this walkway will help address that growing need.

Reopening the walkway will also position the Capital Region for the same kind of tourism success seen in the Mid-Hudson Valley with the Walkway Over the Hudson. The Walkway Over the Hudson reports thousands upon thousands of visitors each year.

The Rensselaer County Legislature joined with a number of other area municipalities in adopting a resolution supporting re-establishment of the walkway on the Livingston Avenue Bridge. Our resolution, which I sponsored, reflects the strong support and enthusiasm for reopening the walkway on the bridge.

Response As noted in the prior comment, the Livingston Avenue Bridge, although part of the High Speed Rail Empire Corridor Program, is being advanced as part of a separate project. The Tier 1 FEIS will note the support for the pedestrian walkway and bicycle path on the bridge.

Commenter Galvin, Patrick M., Senator (Mitch Martin), 59th District, NYS Senate

Comment E-8-1 If you do an alternative option, please include the replacement of the 4 Depew rail bridges and the widening of Transit Road to improve safety and the economy of the village of Depew and the surrounding area.

Response Thank you for your comment discussing the need to improve rail bridges in the Village of Depew. Consideration of bridge replacements will be part of future Tier 2 assessments and constructability analysis for the supporting projects for the Preferred Alternative.

Commenter Sheehan, Kathy, Mayor, City of Albany

Comment E-9-1 The City of Albany is committed to seeing the Bike and Pedestrian Walkway on the Livingston Avenue Bridge restored when this bridge is rebuilt or replaced as part of the Empire Corridor project. The benefits of restored access across the river via a walkway on the Livingston Avenue Bridge has been featured in several local and regional plans, including the City's comprehensive Plan, Albany 2030 (2012), the Albany Bicycle Master Plan (2009), and the Patroon Creek Greenway Plan (2004), and the City's Common Council has passed a resolution of support for the re-establishment of the walkway. The restoration of the walkway is also highlighted in the Corning Preserve Master Plan that the City is currently finalizing. Any new railway bridge that is constructed should reflect the City of Albany's and the Capital Region's commitment to provide excellent bicycle and pedestrian facilities in our urban areas. A multi-modal bridge will link a growing network of multi-use trails, including the Erie Canalway Trail, Albany County's Helderberg Hudson Rail Trail, and the proposed Rensselaer County Trail. Enhancing walking and biking transportation across the Hudson River will increase the efficiency and effectiveness of the transportation network and make the riverfront a more attractive and accessible place to visit.

Response Thank you for your comments in support of the upgrade of the Livingston Avenue Bridge. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. Including accommodations for pedestrians and bicyclists on the Livingston Avenue Bridge would be addressed as part of the Livingston Avenue Bridge Project. For more information on the Livingston Avenue Bridge, please visit the LAB project website:
<https://www.dot.ny.gov/display/projects/livingstonavebridge>

Commenter Sheehan, Kathy, Mayor, City of Albany

Comment E-9-2 For nearly half a century a walkway on the Livingston Avenue Bridge made it possible for pedestrians and bicyclists to easily and safely cross the Hudson River between Rensselaer and Albany. New York State's High Speed Rail investment, and replacement of this historic

crossing, will provide an opportunity to replace the walkway that provided a vital link between these communities. Please ensure that the Empire Corridor Tier 1 Draft Environmental Impact Statement fully acknowledges the planning and development of trails within the region that depend upon the Walkway.

Response Your comments on the Livingston Avenue Bridge have been considered, as noted in the prior response, and the Tier 1 FEIS will note the support for the pedestrian walkway and bicycle path on the bridge.

Commenter **Franczyk, David A., Councilman, The Buffalo Common Council**

Comment E-10-1 My constituents' concerns are that the remaining plans of the Tier 1 Empire Corridor project neglect Buffalo. My understanding is that this project is about connecting the state and improving our transportation. People in Buffalo want to connect with the rest of this state and people in this state want to come to Buffalo.

Response Thank you for your comment on the High Speed Rail Empire Corridor Program. The goals of the program are to improve reliability, trip times, passenger amenities and frequency of service. Comments from elected officials supporting the High Speed Rail Empire Corridor Program have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. Alternative 90B will better serve travelers destined to and from Buffalo and other points along Empire Corridor West by providing more frequent and faster service. Alternative 90B would double the number of trips on Empire Corridor West. It would also reduce travel times in 2035 by 1 ½ hours between Niagara Falls and New York City.

Commenter **Franczyk, David A., Councilman, The Buffalo Common Council**

Comment E-10-2 Now with plans coming together to spend federal funds on the Governor's goal to revitalize Upstate New York, it seems that EPAC has forgotten one of the region's most significant cities. It seems that EPAC has forgotten the New York Central Terminal (NYCT) in Buffalo, designed in 1929. Buffalo's NYCT would be the perfect site to include in your plans for both transportation and historical preservation goals. Yet when reviewing the Tier 1 options, I see that NYSDOT and the FRA are proposing new or rebuilt intermodal train stations in every city except Buffalo.

As your work continues, please consider developments in Buffalo. This city is a major hub of transportation and has a lot to offer the people of this state. Many will benefit from improvements made here.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Improvement to the passenger rail facilities in the City of Buffalo area is an important goal of the High Speed Rail Empire Corridor Program. NYSDOT has implemented upgrades at the existing rail station at Buffalo-Depew to improve/rehabilitate the parking lot and enhance passenger access to comply with Americans with Disabilities Act requirements. The High Speed Rail Empire Corridor Tier 1 EIS evaluates a range of improvements for the purpose of making decisions on corridor-level service. The focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. Buffalo Central Terminal was not included in the analysis of the Build Alternatives. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station over the Central Terminal location. Some of the primary reasons for the selection of the downtown site included economic benefits to the

downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter	Franczyk, David A., Councilman, The Buffalo Common Council
Comment E-10-3	...the Common Council supports the amendment of the High Speed Rail Empire Corridor Program to include the revitalization of the New York Central Terminal on Memorial Drive as an Intermodal Train Station in the City of Buffalo and officially submits this resolution to NYSDOT by the March 24, 2014 deadline.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. As described above, the train station siting committee tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted in favor of a downtown station location.
Commenter	Franczyk, David A., Councilman, The Buffalo Common Council
Comment E-10-4	The City of Buffalo derives very little economic benefit from the proposed High Speed Rail Corridor plan.
Response	Thank you for your comment on the High Speed Rail Empire Corridor Program. Comments from elected officials have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. As described above, the Preferred Alternative and program of improvements for Buffalo include new station investments at both Buffalo-Depew and Buffalo-Exchange Street, which is anticipated to result in economic benefits for the downtown area.
Commenter	Franczyk, David A., Councilman, The Buffalo Common Council
Comment E-10-5	Tragically, the 1929 Felheimer and Wagner 1929 New York Central Terminal is totally and utterly ignored in this flawed plan. That magnificent structure, listed on the Registry of Historic Places, should be the Intermodal hub in Buffalo. This not only revives rail transportation in that facility, but accomplishes the state's historic preservation mission, while revitalizing a struggling East Side community. As Daniel Burnham opined: "Make no small plans"; the omission of the City of Buffalo, once the second largest rail center in the United States, needs to be treated with greater respect as well as a recognition of the vital role it can play in the admirable goal of bringing fast speed rail to the Empire State. Change the plans! Renovate the Central Terminal on Memorial Drive in East Buffalo.
Response	Thank you for your comments on the importance of the Central Terminal in Buffalo. Please refer to the response to Comment E-10-1 for information on the results of the train station siting study and committee vote.
Commenter	Rabb, Gregory P., President and Councilman-at-Large, City of Jamestown
Comment E-11-1	I am concerned that the 32,000 residents of my city in the western most county of New York State are not addressed in your plan.
Response	Thank you for your comment on the High Speed Rail Empire Corridor Program. These improvements are largely confined to the existing right-of-way with proposed service focused on existing station sites. The Preferred Alternative (Alternative 90B) will result in improvements in travel time, frequency, and reliability that should result in regional benefits to the traveling public. Suggestions and comments from elected officials, for

improvements to the service, have been considered in the development of the Service Development Plan.

Commenter **Rabb, Gregory P., President and Councilman-at-Large, City of Jamestown**

Comment E-11-2 AMTRAK does "pass through" our county, Chautauqua, with the Lakeshore Ltd. with no stops despite a station still existing in Dunkirk with easy access to SUNY Fredonia. For the Empire Corridor we can drive to Buffalo-Depew but increasingly there are not enough parking spaces, despite recent improvements, and Buffalo-Depew continues to be slow in loading and unloading passengers causing significant delays due to a lack of elevated platforms as in Syracuse. Our alternative is to use a bus connection to the Buffalo-Exchange Street Station (perhaps the worst station in the system) involving a two hour bus trip with a nearly three hour layover resulting in a five hour trip for 75 miles. My constituents need and deserve better service as do the students at SUNY Fredonia and so I strongly urge you to not forget us and to make better bus connections and Buffalo station improvements an important part of your Empire Corridor plans and your environmental impact statement.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the need to improve service on the Empire Corridor and at Buffalo-Depew. Improvement to the passenger rail facilities in the City of Buffalo area is an important goal of the High Speed Rail Empire Corridor Program. NYSDOT has implemented upgrades at the existing rail station at Buffalo-Depew to improve/rehabilitate the parking lot and enhance passenger access to comply with Americans with Disabilities Act requirements. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee voted to approve a downtown station site close to the existing Buffalo-Exchange Street Station. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. The new station was designed to accommodate potential upgrades in intermodal connectivity in the future.

Commenter **Miner, Stephanie A., Mayor, City of Syracuse**

Comment E-12-1 I am writing to you in support of the development of high speed rail along the Empire Corridor across Upstate New York...

Response Your comments providing support for the High Speed Rail Empire Corridor Program have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter **Miner, Stephanie A., Mayor, City of Syracuse**

Comment E-12-2 Faster rail service through Syracuse has the power to be a major economic catalyst for our entire region and I encourage you to fully discuss all possible options...The City of Syracuse sits as the center of a unique region: we are within 8 hours—a day's drive—of tens of millions of people. New York, Washington, Toronto, Boston, Montreal are all close neighbors. Syracuse has distinctive potential for growth. According to a recent study on American cities by McKinsey and Company, "middleweight cities," those defined as being the anchors of metropolitan statistical areas (MSA) between 150,000 and 10,000,000, are home to 70% of the nation's population and produce 70% of the nation's gross domestic product. The Syracuse MSA is approximately 660,000. Syracuse is home to growing higher education, technology, and medical research industries. We have also seen our urban core undergo rapid expansion in recent years, with over three quarters of a billion dollars in new construction taking place in the City of Syracuse since 2010. This new development is a sign that the private sector understands what we have to offer and wants to see Syracuse realize

our potential. With the implementation of high speed rail as another agent of growth, we will be able to see continued economic expansion across our city and our region.

Response Thank you for your support for the High Speed Rail Empire Corridor Program. Comments from elected officials supporting the High Speed Rail Empire Corridor Program have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. The Preferred Alternative was selected to provide improvements in travel time, frequency, and reliability, which will provide regional travel and economic benefits to Syracuse and other metropolitan areas served.

Commenter **Crist, Craig M., Lawyer, Dreyer Boyajian LLP on Behalf of the Village of Castleton**

Comment E-13-1 As you may be aware, the Village is located on the Empire Corridor South, just south of the Rensselaer Station.
Mayor Keegan and Village Board are in favor of improved rail service, improvement which they believe will continue to spur economic improvement and growth in the region. However, the Village requests that the subject trains decrease their speed through the inhabited portion of the Village. It is the Village Board's belief that this will promote safety as well as protect the structures immediately adjacent to the existing tracks.

Response Thank you for your comment on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Your comments discussing the speed of trains in the Village of Castleton have been noted. Chapters 2 and 3 of the Tier 1 FEIS, address safety for the existing corridor and the program alternatives. Safety issues related to operation of the high speed trains for both grade crossings and along the right of way will be one of the factors considered in advancing the program in Tier 2.

Commenter **Crist, Craig M., Lawyer, Dreyer Boyajian LLP on Behalf of the Village of Castleton**

Comment E-13-2 The Village Board would be in favor of increased accessibility via the now closed Scott Avenue crossing to allow the Village and its residents increased access to the Village's park on the other side of the tracks. This has been the subject of ongoing discussions with NYS DOT.
Finally, continuing project updates are requested, and should be sent to the following address: Mayor Joseph Keegan and Members of the Village Board, 85 South Main Street, Castleton, NY 12033

Response Thank you for your comments regarding operation of passenger trains for the High Speed Rail Empire Corridor Program through the Village of Castleton. We will add the Village Mayor and Members of the Board to our mailing list to receive updates on progress with the program.

Commenter **Leonard, Edmond, Trustee, Village of Walden**

Comment E-14-1 Very impressed with the Tiers--Would hope funding will allow for one of the higher tiers...would hope the project doesn't get bogged down with the approval process

Response Your comment providing support for the High Speed Rail Empire Corridor Program have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter **Doesschate, Judy, Councilwoman, 9th Ward, Albany City Council**

Comment E-15-1 I am a recently-elected member of the Albany City Council, representing the 9th Ward. So no surprise I am here also to support the idea of returning a pedestrian and bike trail to the Livingston Street Bridge.

Response	<p>Thank you for your comments in support of the upgrade of the Livingston Avenue Bridge. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website:</p> <p>https://www.dot.ny.gov/display/projects/livingstonavebridge</p>
Commenter	Doesschate, Judy, Councilwoman, 9th Ward, Albany City Council
Comment E-15-2	<p>I'm not sure that I can fully support the 125 alternative, because I haven't been able to look at the issues and of course we want to make sure that it's also safe, and there is a lot of intersections that these train rails might go by that I would have concerns about ...</p> <p>But certainly to remain competitive, we need to connect upstate better with New York City and interconnect our communities more so that they remain competitive, economically competitive...</p>
Response	Your comment in support of the High Speed Rail Empire Corridor Program have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Dyster, Paul A., Mayor, City of Niagara Falls
Comment E-16-1	<p>My name is Paul A. Dyster. I am the mayor of the City of Niagara Falls, New York.</p> <p>We need to work hard for our ability to get projects cleared environmentally, get more projects into the queue in order to speed this process up.</p>
Response	Your comments in support of the High Speed Rail Empire Corridor Program have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Dyster, Paul A., Mayor, City of Niagara Falls
Comment E-16-2	<p>Second, I want to make a point that more better and faster train service can be managed throughout New York State. Economic growth of New York State has integrated mobility, better planning, higher speed trains so things plus best of all transportation goals in our area. Trains require less land than major airports which means less pollution traveling per passenger.</p> <p>The City of Niagara Falls was ahead of curve. We started over ten years ago with the idea to build a modern station. With the last five years, we have seen our ridership at the Niagara Falls Station increase 30 percent and that's without all the improvements we're contemplating now.</p> <p>We will open the station in 2016.</p>
Response	Thank you for your support for the High Speed Rail Empire Corridor Program and the new Niagara Falls International Railway Station and Intermodal Transportation Center, which opened in December 2016. Comments from elected officials in support of the High Speed Rail Empire Corridor Program have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Dyster, Paul A., Mayor, City of Niagara Falls
Comment E-16-3	<p>Option 125 would clearly be our favorite with the idea of a six-hour travel time between Niagara Falls and New York City which has obvious appeal. Recognizing that time and money do make a difference, we would basically state our intention to support the highest speed objectives that can be delivered in the shortest period of time/cost that is politically</p>

affordable.

I think our hope is that at least we're able to achieve Option 110.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program, and your support of Alternative 125, or 110, has been considered by NYSDOT and the FRA in the selection of the Preferred Alternative. Alternative 90B, the Preferred Alternative, would result in the best on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered (see Exhibit 6-8 in the Tier 1 FEIS). Moreover, Alternative 90B would incur lower costs and fewer environmental impacts than Alternatives 110 and 125. Alternative 90B would have land use impacts in nine areas in six counties, compared to 53 areas in eight counties with Alternative 110. Alternative 125 would impact 2,000 to 3,000 acres for construction of a new right-of-way.

Commenter **Donovan, Dick, Mayor, Village of Minoa**

Comment E-17-1 My village has a distinct, well, pleasure, what have you, of hosting the one section of what's known I think by most of you people as the Dewitt Yard. Thousands of cars go through that yard daily.
Having lived in the Village for 42 years, I've been involved in the fire department, we've had a lot of excitement in that yard. The main switches going eastbound are right in the heart of our village, which, by the way, the yard splits our village right in half, so we've got residents who are primarily of another community and we got homes on both sides of the track, unfortunately. So, as you go forward, I want to ask that consideration -- safety considerations be thought about as far as the speed especially of these units going through populated areas, and I know a lot of improvements have been made over the years and it's less of a concern than it used to be

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. In the Tier 1 FEIS, Chapters 2 and 3 address safety for the existing corridor and the program alternatives. Safety issues related to the operation of the high speed trains and interaction with adjoining rail facilities, such as Dewitt Yard, will be one of the factors considered in advancing the program in Tier 2.

Commenter **Slaughter, Louise, Congresswoman, 25th District, U.S. House of Representatives**

Comment E-18-1 Now, I'm going to be really brief because you know how I feel. I'm going for 125. We've waited well over a hundred years to try to get something done here and I don't want to start small.

Response Thank you Congresswoman Slaughter for your comments in support of the High Speed Rail Empire Corridor Program. Your support for the 125 Alternative has been considered by the FRA and NYSDOT in the selection of the Preferred Alternative. Alternative 90B, the Preferred Alternative, would result in the best on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. Moreover, Alternative 90B would have fewer environmental impacts than Alternative 125 and would also be less costly. Alternative 125 was dismissed, based on greater impacts to 2,000 to 3,000 acres and higher costs (more than double the costs for the Preferred Alternative). One of the drawbacks of Alternative 125 is that express service would not be directly provided to Niagara Falls, Rome, Utica, Amsterdam, and Schenectady. Alternative 125 would also take the longest time to incur travel benefits due to the time required to acquire and construct the right-of-way.

Commenter **Slaughter, Louise, Congresswoman, 25th District, U.S. House of Representatives**

Comment E-18-2	In 1893, about a hundred and twenty-five years ago, the Empire State Express, Old 999, reached speeds of a hundred twelve miles an hour traveling between Batavia and Crittenden. Did you know that? We use the same track today by the way. Right now our fastest train goes thirty-three miles an hour, slower at its best speed, which we don't always see, and passengers know that it frequently travels a lot slower between here and New York City.
Response	Thank you for your comments on the historic railroad operation along the Empire Corridor. The intent of the Preferred Alternative (Alternative 90B) is to add trackage (approximately 370 miles in total), including along this two-track Empire Corridor West that formerly operated as a four-track line.
Commenter	Slaughter, Louise, Congresswoman, 25th District, U.S. House of Representatives
Comment E-18-3	Now, don't tell me that we are not going to be able to make some investments in ourselves. The fact is that a hundred forty-six thousand people rode that train through this station and through this city last year, which was thirty percent higher than the year before. And you saw projections. And I've heard from people for years, frankly, of people who really want to ride that train, who really need to go somewhere.
Response	In your comment you addressed the importance of Rochester on the Empire Corridor. A key goal of the High Speed Rail Empire Corridor Program will be to improve trip times and provide additional trains to the communities along the Empire Corridor in Western New York. A new Rochester Station opened October 6, 2017, with significant help from you. The importance of Rochester as a travel destination, with many schools and high-tech firms is recognized, and ridership forecasts show that an improved service will attract new riders.
Commenter	Slaughter, Louise, Congresswoman, 25th District, U.S. House of Representatives
Comment E-18-4	It is high time, as one of the most important parts of the transportation in the United States of America, that we spend some money to upgrade rail, that we do something about passenger service. We have people who can't drive anymore, who want to go visit their grandchildren, want to go to graduations, maybe want to go to New York City for a play and come back the next day.
Response	In your comments you outline the importance of intercity rail passenger service in our communities. The Preferred Alternative will better serve travelers destined to and from Rochester and other points along Empire Corridor West by providing more frequent and faster service. Alternative 90B would double the number of trips on Empire Corridor West.
Commenter	Slaughter, Louise, Congresswoman, 25th District, U.S. House of Representatives
Comment E-18-5	Now, in addition to what we're doing here all these years I've been working on this I've been working with the Canadians. They've been ready with the money from word go. They would like to go up from Albany up to Montreal over to Toronto, back down into Buffalo. We can't go east or west out of Rochester. And the second, third and fourth largest cities in the State of New York, the Empire State, cannot fly to its State Capitol.
Response	Your comment highlights the opportunities for connections to Canada (Montreal and Toronto), along with other cities along the Empire Corridor. The Preferred Alternative will improve service to communities along the route, providing improved connectivity to the largest cities in the state and to points beyond. Recommendations from elected officials and public for initiatives to improve service will be considered in the development of the Service

Development Plan.

Commenter **Slaughter, Louise, Congresswoman, 25th District, U.S. House of Representatives**

Comment
E-18-6 What I would like is -- and, you know, New York Central had four tracks. It is ideal. It's a straight shoot across there. We have no great problems that we have to do with geography. We have all the overpasses, the bridges and everything to accommodate four tracks. Only two are now being used. We need the dedicated third track for passengers. And the idea is that people who live in Buffalo can work in Rochester and vice versa. You can go to school back and forth. And, most important, you might go to New York City and spend about all the time you can stand down there and then make it back home and go to bed in your own bed at night. I love that idea.

Response Thank you for your comment in support of the High Speed Rail Empire Corridor Program, and its goals to improve passenger service and amenities and frequency of service along the route and connect the cities of New York State. The Tier 1 FEIS reviews the operation of multiple tracks for the alternatives considered for the High Speed Rail Empire Corridor Program with the purpose of identifying the necessary infrastructure projects to improve travel times and the reliability of service along the Empire Corridor. The Preferred Alternative, Alternative 90B, will add approximately 370 miles of trackage to better segregate passenger trains from freight.

Commenter **Slaughter, Louise, Congresswoman, 25th District, U.S. House of Representatives**

Comment
E-18-7 But there was one thing I wanted to say about the college kids and how important they are. You know, this is a treatment center for people who are hard of hearing. We have NTID, which is one of the best schools in the country here for the deaf. We met with students from universities and the colleges and from NTID. And a young woman told me something that I want you to remember what it's like to travel the railroad station in Rochester. She said that when she's in most stations the signage is so poor that what she does is when a huge crowd of people get up to go somewhere, she goes with them, hoping to goodness that they're going where she needs to be. Now, all that signage is going to be taken care of. We are paying attention to that. It's going to be wired for the internet from one end of it to the other. Everything in the world you want is in there. Tracks on both sides. Tracks that are level to the train. We're coming up into the 21st Century.

Response The New York State Department of Transportation, in partnership with Amtrak, CSX Transportation, the Federal Railroad Administration and the City of Rochester, and with significant help and support from you, constructed a new passenger rail station for the Rochester community. The new facility is fully compatible with the requirements of the Americans With Disabilities Act, offering facilities and signage to provide all passengers access to the station and boarding. A key feature of the new station is the high-level platform, which allows passengers to board and exit the trains without the need to use steps. The new high level platform on the dedicated passenger train tracks also improves the reliability of trains stopping at Rochester by allowing two trains to use the station simultaneously. The new facility at Rochester features state-of-the-art technology and wayfinding to facilitate passenger and baggage flow, as one of the newest stations in the Amtrak system.

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Commenter	Striffler, Scot, Bridge Program Manager, Ninth District, U.S. Coast Guard
Comment F-1-1	Please include detailed potential impacts to vessel traffic, and navigation in general, in the descriptions of each alternative during the remainder of the EIS study.
Response	Impacts to navigation or vessel traffic are not anticipated with the possible exception of construction activity. Once the design for the Preferred Alternative is developed in Tier 2, the details of impacts on navigation during construction would be addressed.
Commenter	Striffler, Scot, Bridge Program Manager, Ninth District, U.S. Coast Guard
Comment F-1-2	Ninth Coast Guard District jurisdiction would only appear to apply to the "Empire Corridor West" and "Niagara Branch" sections of the DEIS and project area. Pending additional details as the study progresses this office may exercise jurisdiction or have permit requirements for each alternative still under consideration that includes upgrades or modifications to existing infrastructure, as well as proposed additional infrastructure, for any crossing of the New York Barge Canal System west of St. Johnsville, New York in Montgomery County, New York (mile 69.7). Though not considered a complete or final list, other waterways described in the DEIS that may fall within the jurisdiction of this office include; Cayuga-Seneca Canal Oswego Canal Mohawk River Genessee River Scajaquada Creek Niagara River Buffalo River Black Rock Canal (Buffalo, NY) Tonawanda Creek
Response	Thank you for your comment. If crossings of these other navigable waterways are proposed, coordination will be conducted with the USCG. A number of these navigable waterways were identified within the Tier 1 EIS, but if they were not located within the 300-foot study area, they were not specifically identified.
Commenter	O'Brien, Doug, Acting Under Secretary, U.S. Department of Agriculture, Rural Development, Office of the Under Secretary
Comment F-2-1	We appreciate the opportunity to review this Draft EIS. At this time the Department offers no comment.
Response	The response of the Department of Agriculture, Rural Development relating to the High Speed Rail Empire Corridor Program is recognized
Commenter	Colligan, Mary A., Assistant Regional Administrator for Protected Resources, National Marine Fisheries Service, Northeast Region
Comment F-3-1	We offer the following comments in regards to protected species listed under the Endangered Species Act (ESA) of 1973, as amended, as well as other species and habitats protected under the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and Fish and Wildlife Coordination Act (FWCA) under our jurisdiction.
Response	The comments offered by the Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Northeast Region will be addressed in

the Tier 1 FEIS and Tier 2 analysis, as noted in the specific comments that follow.

Commenter	Colligan, Mary A., Assistant Regional Administrator for Protected Resources, National Marine Fisheries Service, Northeast Region
Comment F-3-2	All of the alternatives discussed in the DEIS except the Base (i.e., No Action) Alternative include railroad crossings over the Hudson River. Specifically, Alternatives 90A, 90B, 110, and 125 include in-water work in order to replace the Livingston Avenue Bridge connecting Albany and Rensselaer, New York. Therefore, below we present information on ESA-listed species in the Hudson River. In addition, we recommend several mitigation measures to be undertaken during in-water construction activities to minimize impacts to listed species and their habitat. Finally, we provide guidelines for engaging with us in consultation under section 7 of the ESA.
Response	The Livingston Avenue Bridge Project () and associated EA is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. Under that environmental review, FRA and NYSDOT are coordinating with NMFS regarding Section 7 of the ESA.
Commenter	Colligan, Mary A., Assistant Regional Administrator for Protected Resources, National Marine Fisheries Service, Northeast Region
Comment F-3-3	<p>Shortnose Sturgeon (<i>Acipenser brevirostrum</i>)</p> <p>A population of the federally endangered shortnose sturgeon occurs in the Hudson River. They have been documented from upper Staten Island (approximately river kilometer [rkm] 4.8) to the Troy Dam (approximately rkm 245). From late fall to early spring, adult shortnose sturgeon concentrate in a few overwintering areas. The largest overwintering area is just south of Kingston, New York, near Esopus Meadows (rkm 139-152) (Dovel et al. 1992). The fish overwintering at Esopus Meadows are mainly spawning adults. Captures of shortnose sturgeon during the fall and winter from Saugerties to Hyde Park (greater Kingston reach) indicate that additional smaller overwintering areas may be present (Geoghegan et al. 1992). Both Dovel et al. (1992) and Geoghegan et al. (1992) also confirmed an overwintering site in the Croton/Haverstraw Bay area (rkm 54-61). Fish overwintering in areas below Esopus Meadows are mainly thought to be pre-spawning adults. Typically, movements during overwintering periods are localized and fairly sedentary.</p> <p>When water temperatures reach 8-9°C, typically in late March through mid-April, reproductively active adults begin their migration upstream to the spawning grounds that extend from below the Federal Dam at Troy to about Coeymans, New York (rkm 245-212) (Dovel et al. 1992). Spawning typically occurs at water temperatures between 10-18°C (generally from late April through May) after which adults disperse quickly down river into their summer range. In fact, Dovel et al. (1992) reported that spawning fish tagged at Troy were recaptured in Haverstraw Bay in early June. The broad summer range occupied by adult shortnose sturgeon extends from approximately rkm 38-177. Similar to non-spawning adults, most juveniles occupy the broad region of Haverstraw Bay (rkm 54-61) by late fall and early winter (Dovel et al. 1992; Geoghegan et al. 1992). Juveniles are distributed throughout the mid-river region during the summer (rkm 38-152) and move back into the Haverstraw Bay region during the late fall (Geoghegan et al. 1992; Bain et al. 1998). Eggs and larvae are expected to be present within the vicinity of the spawning grounds for approximately four weeks post spawning (i.e., at the latest, through mid-June).</p>
Response	Section 4.13.3 of the Tier 1 EIS identifies the presence of federally endangered shortnose sturgeon and habitat within the study area. The comments offered by the Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries

Service, Northeast Region will be addressed in the Tier 1 FEIS and Tier 2 analysis.

Commenter **Colligan, Mary A., Assistant Regional Administrator for Protected Resources, National Marine Fisheries Service, Northeast Region**

Comment
F-3-4

Atlantic Sturgeon (*Acipenser oxyrinchus oxyrinchus*)

Use of the Hudson River by Atlantic sturgeon has been described by several authors. Briefly, spawning likely occurs in multiple sites within the river from approximately rkm 56-182 (Dovel and Berggren 1983; Van Eenennaam et al. 1996; Kahnle et al. 1998; Bain et al. 2000). Selection of sites in a given year may be influenced by the position of the salt wedge (Dovel and Berggren 1983; Van Eenennaam et al. 1996; Kahnle et al. 1998). The area around Hyde Park (approximately rkm 134) has consistently been identified as a spawning area through scientific studies and historical records of the Hudson River sturgeon fishery (Dovel and Berggren 1983; Van Eenennaam et al. 1996; Kahnle et al. 1998; Bain et al. 2000). Habitat conditions at the Hyde Park site are described as freshwater year round with bedrock, silt and clay substrates and waters depths of 12-24 meters (Bain et al. 2000). Bain et al. (2000) also identified a spawning site at rkm 112 based on tracking data. The rkm 112 site, located to one side of the river, has clay, silt and sand substrates, and is approximately 21-27 meters deep (Bain et al. 2000).

Young-of-year (YOY) have been recorded in the Hudson River between rkm 60 and rkm 148, which includes some brackish waters; however, larvae must remain upstream of the salt wedge because of their low salinity tolerance (Dovel and Berggren 1983; Kahnle et al. 1998; Bain et al. 2000). Catches of immature sturgeon (age-1 and older) suggest that juveniles utilize the estuary from the Tappan Zee Bridge through Kingston (rkm 43-148) (Dovel and Berggren 1983; Bain et al. 2000). Seasonal movements are apparent with juveniles occupying waters from rkm 60-107 during summer months and then moving downstream as water temperatures decline in the fall, primarily occupying waters from rkm 19-74 (Dovel and Berggren 1983; Bain et al. 2000). Based on river-bottom sediment maps (Coch and Bokuniewicz 1986) most juvenile sturgeon habitats in the Hudson River have clay, sand, and silt substrates (Bain et al. 2000). Newburgh and Haverstraw Bays in the Hudson River are areas of known juvenile sturgeon concentrations (Sweka et al. 2007). Sampling in spring and fall revealed that highest catches of juvenile Atlantic sturgeon occurred during spring in soft-deep areas of Haverstraw Bay even though this habitat type comprised only 25% of the available habitat in the Bay (Sweka et al. 2007). Overall, 90% of the total 562 individual juvenile Atlantic sturgeon captured during the course of this study (14 were captured more than once) came from Haverstraw Bay (Sweka et al. 2007). At around three years of age, Hudson River juveniles exceeding 70 centimeters total length begin to migrate to marine waters (Bain et al. 2000).

Atlantic sturgeon adults are likely to migrate through the action area in the spring as they move from oceanic overwintering sites to upstream spawning sites and then migrate back through the area as they move to lower reaches of the estuary or oceanic areas in the late spring and early summer. Atlantic sturgeon adults are most likely to occur in the action area from May through September. Tracking data from tagged juvenile Atlantic sturgeon indicates that during the spring and summer individuals are most likely to occur within rkm 60-170. During the winter months, juvenile Atlantic sturgeon are most likely to occur from rkm 19-74. This seasonal change in distribution may be associated with seasonal movements of the salt wedge and differential seasonal use of habitats.

Please note, as the New York Bight distinct population segment (DPS) of Atlantic sturgeon is the only DPS of Atlantic sturgeon that spawns in the Hudson River, the information provided above only applies to this DPS. However, other DPSs of Atlantic sturgeon (e.g., Gulf of Maine, Chesapeake Bay, Carolina, and South Atlantic) are known to be present within the Hudson River, approximately up to the 0.5 parts per thousand salinity threshold in the River. As such, subadult and adult Atlantic sturgeon from any DPS may be present within the Hudson River.

Response	Section 4.13.3 of the Tier 1 DEIS/FEIS identifies the presence of federally endangered Atlantic sturgeon and habitat within the study area. The comments offered by the Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Northeast Region will be addressed in the Tier 1 FEIS and Tier 2 analysis.
Commenter	Colligan, Mary A., Assistant Regional Administrator for Protected Resources, National Marine Fisheries Service, Northeast Region
Comment F-3-5	<p>Mitigation Measures</p> <p>All but one of the proposed alternatives in the DEIS call for the replacement of the Livingston Avenue Bridge, which spans the Hudson River and connects the cities of Albany and Rensselaer. This bridge is located within the reach of the Hudson River used by shortnose sturgeon as a spawning ground. To avoid impacts to spawning adults or early life-stages, no in-water work should be undertaken from March 1 - June 30 of any calendar year. Outside of these time frames, shortnose sturgeon are not likely to occur in the vicinity of the bridge site. If the above time frame cannot be avoided, we recommend the following measures to minimize shortnose sturgeon exposure to injurious or disturbing levels of underwater noise during pile driving activities:</p> <ul style="list-style-type: none"> • Use of a soft start; and • Use of a vibratory hammer. This method of pile installation is non-impulsive and is believed to result in underwater noise levels approximately 10 decibels (dB) less than those levels of underwater noise produced during impact pile driving operations (Illingworth and Rodkin, Inc. and Jones and Stokes 2009). If feasible, we would also recommend the use of dewatered casings or enclosed bubble curtains around each pile to be driven to assist in further attenuation of underwater noise levels. Depending on pile size, these attenuation devices can provide between a 5-20 dB reduction in underwater noise levels (Illingworth and Rodkin, Inc. and Jones and Stokes 2009); or • Use of an impact hammer in conjunction with a wooden cushion block. The use of a wooden cushion block provides approximately 11-26 dB reduction in underwater noise levels produced during pile installation activities (Illingworth and Rodkin, Inc. and Jones and Stokes 2009). If feasible, we would also recommend the use of dewatered casings or enclosed bubble curtains around each pile to be driven to assist in further attenuation of underwater noise levels. Depending on pile size, these attenuation devices can provide between a 5-20 dB reduction in underwater noise levels (Illingworth and Rodkin, Inc. and Jones and Stokes 2009). <p>As shortnose sturgeon are also extremely sensitive to the exposure of elevated levels of noise and pressure levels produced by blasting, we strongly recommend the implementation of the following best management practices during all blasting operations which may occur during demolition of the existing bridge:</p> <ul style="list-style-type: none"> • Stemming of each detonation bore hole; • Delayed detonations; • Detonating charges with weights that will result in noise/pressure levels that are less than the injury/mortality and behavioral thresholds described above. If the latter cannot be done, blasting operations must be conducted in such a manner that the production of injury/mortality thresholds remains within close proximity to the source (i.e., within 100 feet); • Placement of a weighted turbidity curtain around the areas to be blasted. If injury/mortality thresholds are expected to be produced, we strongly recommend that the turbidity curtain be placed from the source to the distance where injury thresholds will be attained (i.e., at 100 feet). This will act as barrier, preventing any listed species from entering that area from the source where exposure to injurious levels of noise or pressure is likely; and • Development of a blast plan. In advance of any detonation activities, we would require that the applicant provide us with the blast plan for our review.

Response	Section 4.13.5 of the Tier 1 FEIS generally addresses mitigation measures. NYSDOT understands the time-of-year restrictions and the additional mitigation measures recommended by the National Marine Fisheries Service, which have been incorporated into the Tier 1 FEIS as appropriate. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for the Tier 1 assessment, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. Under that environmental review, FRA and NYSDOT are coordinating with NMFS regarding Section 7 of the ESA.
Commenter	Colligan, Mary A., Assistant Regional Administrator for Protected Resources, National Marine Fisheries Service, Northeast Region
Comment F-3-6	If the proposed project has the potential to affect ESA-listed species, and it is being approved, permitted, or funded by a Federal agency, the lead Federal agency (or their designated non-Federal representative) is responsible for determining whether the proposed action is likely to affect the listed species. The Federal agency would submit their determination, along with justification for their determination and a request for concurrence, to the attention of the ESA Section 7 Coordinator, NMFS Greater Atlantic Regional Fisheries Office, Protected Resources Division, 55 Great Republic Drive, Gloucester, MA 01930. After reviewing this information, we would then be able to conduct a consultation under section 7 of the ESA. Therefore, once an alternative is selected, we encourage you to contact us regarding the need for consultation
Response	NMFS will be consulted regarding the need for a Section 7 Evaluation, if appropriate during Tier 2 analysis. As discussed above, the Livingston Avenue Bridge replacement is advancing as a separate component project with independent utility. If required, a Section 7 Evaluation will be undertaken as part of a federally funded, permitted, or approved project that may affect ESA-listed species.
Commenter	Colligan, Mary A., Assistant Regional Administrator for Protected Resources, National Marine Fisheries Service, Northeast Region
Comment F-3-7	If the project may result in substantial adverse impacts to EFH, an expanded EFH consultation would be necessary [§600.920(i)]. In preparing an expanded EFH consultation, we encourage you to include additional information in the EFH assessment such as results of onsite inspections, views of recognized experts, a review of pertinent literature, an analysis of alternatives and any other relevant information [50 C.F.R. §600.920(e)(4)]. Finally, depending on the degree and type of habitat impact, compensatory mitigation may be necessary to offset permanent and temporary effects of the project.
Response	NMFS will be consulted, as appropriate, regarding the need for an EFH (Essential Fish Habitat) Assessment. If needed, an EFH Assessment will be performed. Mitigation measures will be proposed as necessary to offset temporary or permanent adverse impacts.
Commenter	Colligan, Mary A., Assistant Regional Administrator for Protected Resources, National Marine Fisheries Service, Northeast Region
Comment F-3-8	While many of the impacts that would accrue to federally managed fishery resources under the MSA also would accrue to FWCA species, it is important to note that the interests of some species would not be represented adequately by relying on the EFH assessment alone. For instance, shellfish do not have an appropriate surrogate among the federally managed fishery resources that have EFH designated in the project vicinity and their needs and those of other nonrepresented species should be discussed at length in this section. Similarly, the

behaviors and habitat needs of diadromous and estuary-dependent fishes may not be represented by a discussion surrounding marine fishes. The discussion for FWCA species should be designed around an ecological guild model that uses locally important species to evaluate the project impacts to organisms or populations associated with the various trophic levels and life history strategies exhibited by FWCA species known to occupy the project site as residents or transients. Focus should be on issues surrounding particular species, life history stages, or habitat components that would be most susceptible to the various potential impacts.

Response The detailed species evaluations referenced in the comment would be addressed, as appropriate, during any detailed species-specific evaluations that may be performed for the EFH species. Without more details on both the nature and locations of program impacts on waterways, which are not available at the Tier 1 level, such an evaluation is not proposed to be included in the Tier 1 FEIS.

Commenter McDonald, Jodi M., Chief, Regulatory Branch, U.S. Army Corps of Engineers, New York District

Comment F-4-1 As noted above, Department of the Army permits may be required from both the New York and Buffalo Districts of the U.S. Army Corps of Engineers to implement projects under the High Speed Rail Empire Corridor Program. Your primary contact for projects within the New York District's regulatory area of responsibility is Christine Delorier who may be reached at christine.delorier@usace.army.mil or (518) 266-6354. Your primary contact for projects within the Buffalo District's regulatory area of responsibility is Bridget Brown who may be reached at bridget.brown@usace.army.mil or (315) 255-0143. The following website contains a map of New York State that identifies the boundaries of the regulatory area of responsibility for both districts:
<http://www.lrb.usace.army.mil/Missions/Regulatory.aspx>
 For projects that span both districts, please be sure to contact both Corps points of contact.

Response The permits that may be required are identified in the resource sections of the Tier 1 FEIS and will be confirmed and obtained during Tier 2 when impacts can be determined based on final design.

Commenter McDonald, Jodi M., Chief, Regulatory Branch, U.S. Army Corps of Engineers, New York District

Comment F-4-2 According to the Tier 1 DEIS, the Base Alternative consists of eight planned rail improvement projects that have already received NEPA Categorical Exclusions from the Federal Railroad Administration.
 We have no records of issuing any Department of the Army permits for these projects, and they may be required for work at some of these sites. The "Albany Schenectady Double Track Project", for example, proposes earthwork and grading, 19 bridge rehabilitations, 22 culvert repairs, new interlockings, a new signal system between Rensselaer and Schenectady, new 4 quadrant grates at three grade crossings in Colonie, and gated access roads along the right-of-way, all to be done by a contractor, and then the installation of 17 miles of double track by Amtrak forces, and likely requires a Department of the Army permit. We recommend that the proponents of these projects contact us to determine whether permits are required for the eight projects. If permits are required, completed permit applications should be submitted to the appropriate Corps District with sufficient time to allow the appropriate review and processing of the application, and prior to the commencement of project construction to avoid potential violations of Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act.

Response Correspondence, dated May 19, 2014 from NYSDOT to the USACE, addressed the permitting

status of the eight planned rail improvements that comprise the Base Alternative. In this correspondence, NYSDOT indicated that in undertaking projects such as these, efforts are made to avoid and minimize the impacts to waters of the United States. In cases where the impacts are unavoidable, the activities are typically authorized under the Section 404 Nationwide Permit (NWP) program. All of the projects contained in the Base Alternative have been screened and delineated for wetlands as part of each individual project's NEPA process. Two of the projects in the Base Alternative involved impacts to waters of the United States that are authorized by the NWP program, the Albany Schenectady Double Track Project, which was combined with the Albany-Rensselaer Station Fourth Track Capacity Improvements project and the Hudson Line Signal Wire Relocation project, which was combined with the Highway-Rail Grade Crossings Safety Improvements project. These projects within the Base Alternative have been completed. The Syracuse Track Configuration and Signals Improvement project (Phase 1) has also been completed, and no wetland impacts were anticipated to occur. The remaining three projects, Schenectady Station, Rochester Station, and Niagara Falls Station have also been completed in urbanized areas and also (as documented in Categorical Exclusion filings) were not anticipated to involve any impacts to waters of the United States requiring permit assessments. The minor impacts to waters of the United States associated with the Albany Schenectady Double Track Project were authorized by NWP #14 – Linear Transportation Projects. The minor impacts to waters of the United States associated with the Hudson Line Signal Project were authorized by NWP #3- Maintenance for minor impacts to waters of the United States. Both of these projects have been completed and complied with the NWP General Conditions and the permit-specific Regional Conditions.

Commenter **McDonald, Jodi M., Chief, Regulatory Branch, U.S. Army Corps of Engineers, New York District**

Comment F-4-3 Section 4.6 of the Tier 1 DEIS identifies and discusses potential effects to surface waterbodies and watercourses, and Appendix G includes information on existing watercourses that have been identified within the project study area. The Regulatory Context section fails to discuss Sections 404 and 401 of the Clean Water Act and Section 10 of the Rivers and Harbors Act as also being applicable to the overall program implementation. Section 4.6 and Appendix G also focus on whether the identified waterbodies and watercourses are protected by the New York State Department of Environmental Conservation (NYSDEC), without acknowledging that all of these waterways, whether protected by the NYSDEC or not, are likely waters of the United States and subject to jurisdiction by the U.S. Army Corps of Engineers. We are also concerned that given the methods utilized to identify watercourses, many smaller streams that may be waters of the United States have yet to be identified. As with the future analysis of wetlands within the study area, we hope that future analysis of waterbodies and watercourses includes the field identification and delineation of these waters. Last, after all efforts to avoid and minimize impacts to these waters have been achieved through any re-designs and proposal of best management practices, we wanted to advise you that mitigation through the restoration, enhancement and/or preservation of water bodies and watercourses may be required by the U.S. Army Corps of Engineers to compensate for the resulting proposed lost functions and services of these aquatic resources.

Response The "Regulatory Section" of Section 4.10, Wetlands includes discussion of Sections 10, 401, and 404. The "Future Analysis" section, Section 4.6.6 of the Tier 1 FEIS, discusses filing of a joint permit application under Section 10/Section 401/Section 404, as appropriate. This section acknowledges that these waterways are protected and subject to jurisdiction under these regulatory programs. The detailed field identifications of waterways and wetlands would occur during Tier 2 analysis, as appropriate, and impact analysis would be performed using more detailed design, but the information has not yet been developed in Tier 1 to determine which of these waterways will be affected. Future analysis in Tier 2 would also

include efforts to avoid and minimize impacts on affected waterways and development of appropriate mitigation measures, through restoration, enhancement, and/or preservation of waterbodies.

Commenter McDonald, Jodi M., Chief, Regulatory Branch, U.S. Army Corps of Engineers, New York District

Comment F-4-4 All of the navigable waterways within the study area that are subject to Section 10 of the Rivers and Harbors Act have not been identified at this point. Potential additional navigable waters within the study area include the Papsanee Creek, Schodack Creek and Stockport Creek; among others. We anticipate your coordination with us to help identify all waters subject to Section 10 of the Rivers and Harbors Act as the program progresses.

Response The information provided by or available from the U.S. Coast Guard and the U.S. Army Corps of Engineers regarding navigable waterways provided the basis for navigability determinations in the Tier 1 EIS. These are all tributaries to the Hudson River, which is identified as navigable in the Tier 1 EIS. The proposed work where the Empire Corridor either adjoins or crosses these Hudson River tributaries in Rensselaer and Columbia counties is anticipated to be constrained to the right-of-way and is not anticipated to involve impacts to navigable waterways. As previously discussed, the Tier 1 inventory of waterways will be refined in Tier 2 analysis, when project plans are developed in more detail. Coordination will be performed with the U.S. Coast Guard and the U.S. Army Corps of Engineers in Tier 2 regarding any work proposed in navigable waters, as appropriate.

Commenter McDonald, Jodi M., Chief, Regulatory Branch, U.S. Army Corps of Engineers, New York District

Comment F-4-5 Section 4.10 of the Tier 1 DEIS identifies and discusses potential effects to wetlands, and Appendix G includes information on existing wetlands that have been identified within the project study area. The Regulatory Context section fails to note that federal wetlands may also be subject to Section 10 of the Rivers and Harbors Act when those wetlands are situated below the plane of the mean high water in tidal waters, and below the ordinary high water mark of non-tidal waters that the U.S. Army Corps of Engineers has determined to be navigable. We are also concerned that the Tier 1 DEIS has underestimated the amount of potential federal wetlands within the study area as USGS Quadrangles and National Wetlands Inventory (NWI) maps were utilized for their identification. These maps are broad scale and NWI maps are not available for many locations within the study area. We recommend that you also consult county soil surveys prepared by the Natural Resources Conservation Service to help identify additional wetlands within the study area and more accurately assess the five proposed alternatives before one is selected, which is when the wetlands would be field delineated and likely need verification by the U.S. Army Corps of Engineers.

Response The 'Future Analysis' section, Section 4.6.6 of the Tier 1 FEIS, discusses filing of a joint permit application under Section 10/Section 401/Section 404, as appropriate. This section acknowledges that these waterways are protected and subject to jurisdiction under these regulatory programs. The information in Tier 1 relies on existing available mapping (such as NWI mapping), but the detailed mapping and field identifications of waterways and wetlands would occur during future detailed design. Future analysis would be part of the program development in Tier 2, as specific improvements were identified and would include consulting NRCS (Natural Resources Conservation Service) soil surveys and detailed delineations of wetlands, in consultation with the U.S. ACOE.

Commenter McDonald, Jodi M., Chief, Regulatory Branch, U.S. Army Corps of Engineers, New York District

Comment F-4-6 As outlined in the Tier 1 DEIS, Alternative 125 would have the highest amount of temporary and permanent impacts to waters of the United States, including wetlands. Based on what has been submitted to date, we believe the adverse impacts to aquatic resources associated with this alternative are more than minimal and may not meet all applicable provisions of the Section 404(b)(1) Guidelines at 40 CFR Part 230, especially in comparison of the limited additional benefits that would be gained by this alternative, which wouldn't be experienced until 2035.

Response Alternative 90B has been identified as the Preferred Alternative, based on consideration of factors such as meeting the program purpose and need, costs, and impacts. The Tier 1 FEIS also indicates that Alternative 125 will involve greater impacts to Waters of the U.S. than the other alternatives under consideration. However, Alternative 125 provides the greatest effectiveness in meeting many program performance measures including on-time performance, travel time reductions, service frequency improvements, ridership increases and automobile trips reductions. Alternative 125 creates a separate dedicated passenger rail alignment over much of its length, which is beneficial to avoiding conflicts with freight traffic. These factors have been taken into consideration in the selection of the Preferred Alternative.

Commenter McDonald, Jodi M., Chief, Regulatory Branch, U.S. Army Corps of Engineers, New York District

Comment F-4-7 Regardless of the alternative that is selected, we recommend that all efforts be undertaken to avoid and minimize the amount of temporary and permanent impacts to waters of the United States to the maximum extent practicable and that adequate compensatory mitigation plans, developed in accordance with 33 CFR Part 332, be prepared as necessary to compensate for the losses of aquatic resource functions and services for what we determine to be single and complete projects. To do this, we recommend continued consultation with the U.S. Army Corps of Engineers during future program and project development.

Response Alternative 90B has been selected as the Preferred Alternative. In Tier 2, future design, and any wetlands assessments performed, will include efforts to avoid and minimize impacts on waters of the U.S. and development of compensatory mitigation plans, as appropriate, in consultation with the U.S. ACOE.

Commenter Raddant, Andrew L., Regional Environmental Officer, U.S. Department of the Interior, Office of Environmental Policy and Compliance, Office of the Secretary

Comment F-5-1 Agency's, 404(b)1 Guidelines, Part 230 (Title 40, 33 U.S.C. 1344(b) and 136l(a)). The Department's comments represent contributions from two bureaus, the U.S. Fish & Wildlife Service (Service) and the National Park Service.

Response The comments of both the U.S. Fish & Wildlife Service and the National Park Service are addressed below.

Commenter Raddant, Andrew L., Regional Environmental Officer, U.S. Department of the Interior, Office of Environmental Policy and Compliance, Office of the Secretary

Comment F-5-2 U.S. FISH AND WILDLIFE SERVICE
Endangered Species Act
On April 9, 2011, the Department's U.S. Fish and Wildlife Service responded to your request for information regarding known occurrences of Federally-listed threatened and endangered species along the proposed route (see enclosure).

The DEIS states that "Information on ecological habitat and endangered and threatened species for study areas within a half-mile of the corridor centerline for all alternatives was obtained from the U.S. FWS, the NYSDEC, and the New York Natural Heritage Program. Information from the U.S. FWS on federal listing status and occurrences by county was consulted (4.13.2 Methodology) and sixteen species were identified within the study area." The Federal Rail Authority (FRA) is responsible for making the final effects determination pursuant to Section 7(a)(2) of the ESA, unless FRA has designated NYSDOT as a non-federal representative. If this is the case, please provide a copy of that designation in the environmental documentation.

The Service recommends that NYSDOT delineate the action area which is defined as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action" (50 CFR §402.02). Then, visit our website at: <http://www.fws.gov/northeast/nyfo/es/section7.htm> and follow the step-by-step instructions to obtain an up-to-date, official species list and information about listed, proposed, and candidate species. Then follow the steps to complete initial assessments of whether a species may be present and impacted by the proposed action. This information should be included in the Tier II EIS for our review. Pursuant to Section 7(c) of the ESA, the FRA should "conduct a biological assessment for the purpose of identifying any endangered or threatened species which is likely to be affected" by the proposed action. The Service is available to provide technical assistance in conducting this assessment.

Response

The FRA has not designated NYSDOT as a non-federal representative. USFWS lists of rare and listed species were consulted in performing the Tier 1 environmental inventory for the 1/2 mile buffer on either side of the railroads where work may be proposed. This buffer area was identified to account for indirect as well as direct impacts as a result of the proposed improvements. In Tier 2, if impacts to federally listed endangered or threatened species may occur that warrant further regulatory review, the FRA will conduct a Biological Assessment pursuant to Section 7 of the ESA, as appropriate. As part of Tier 1, the initial steps identified in the step-by-step instructions at the USFWS website (such as consulting with NYSDEC to determine the presence of listed species) have been completed. The later steps would be part of a Tier 2 assessment.

Commenter

Raddant, Andrew L., Regional Environmental Officer, U.S. Department of the Interior, Office of Environmental Policy and Compliance, Office of the Secretary

**Comment
F-5-3**

Pursuant to Section 7(a)(4) of the ESA, federal action agencies are required to confer with the Service if their proposed action is likely to jeopardize the continued existence of the northern long-eared bat (*Myotis septentrionalis*) (50 CFR 402.1 O(a)), a species currently proposed for listing as endangered under the ESA. We expect a listing determination in October 2014. Action agencies may also voluntarily confer with the Service if the proposed action may affect a proposed species. Species proposed for listing are not afforded protection under the ESA. However, as soon as a listing becomes effective, the prohibition against jeopardizing its continued existence and "take" applies regardless of an action's stage of completion.

If the FRA retains any discretionary involvement or control over on-the-ground actions that may affect the species after listing, Section 7(a)(2) applies. Therefore, if suitable northern long-eared bat habitat is present within the proposed project area, we recommend further coordination with our office to avoid potential project delays should the species be listed. Additional information regarding the northern long-eared bat and conference procedures can be found at: <https://www.fws.gov/midwest/endangered/mammals/nleb/index.html>.

Response

The Tier 1 FEIS has been updated to include the listing, documented occurrences, and range of the northern long-eared bat, which was listed on April 2, 2015. If listed species or species proposed for listing, such as the northern long-eared bat (listed as both federally and state threatened species), may be affected, consultation will occur in Tier 2 with USFWS in

accordance with Section 7 of the ESA.

Commenter	Raddant, Andrew L., Regional Environmental Officer, U.S. Department of the Interior, Office of Environmental Policy and Compliance, Office of the Secretary
Comment F-5-4	Until the proposed project is complete, we recommend checking our website every 90 days from the date of this letter to ensure that listed species presence/absence information for the proposed project is current (http://www.fws.gov/northeast/nyfo/es/section7.htm).
Response	The Tier 1 FEIS has been updated to reflect the listing of the northern long-eared bat, and the latest endangered and threatened species mapping data from the New York Natural Heritage Program was obtained in 2021. The listing status of species will be updated for any subsequent environmental documents prepared as part of Tier 2.
Commenter	Raddant, Andrew L., Regional Environmental Officer, U.S. Department of the Interior, Office of Environmental Policy and Compliance, Office of the Secretary
Comment F-5-5	Any additional information regarding the proposed project and its potential to impact listed species should be coordinated with both this office and with the New York State Department of Environmental Conservation (NYSDEC) office in Schenectady, NY (telephone 518-357-2450).
Response	In Tier 2, when the Preferred Alternative, Alternative 90B, is advanced into final design, further consideration of potential impacts to listed species will occur. Further analysis with respect to project impacts will include coordination with USFWS and NYSDEC Regional offices.
Commenter	Raddant, Andrew L., Regional Environmental Officer, U.S. Department of the Interior, Office of Environmental Policy and Compliance, Office of the Secretary
Comment F-5-6	<p>Fish and Wildlife Coordination Act</p> <p>The Department is concerned that the proposed conversion may result in potential effects on fish and wildlife resources. These effects may include an increase in wildlife mortality and injury from being struck by trains, indirect impacts from noise, vibration and visual impacts, habitat fragmentation, and connectivity (both terrestrial and aquatic). In addition, we are also concerned with the potential for railroad crossings (culverts, bridges), rock rip-rap along stream and riverbanks, pollutants, and surface runoff into waterways. Subsequent documentation should include an explanation of how NYSDOT plans to address impacts to fish and wildlife as a result of increased train speeds. The Department recommends that NYSDOT specifically address the potential for any impacts to the Hudson River, the Erie Barge Canal, the Mohawk River, the Genesee River, the Harlem River, and Ellicott Creek in the Tier II DEIS.</p> <p>The Department recommends that the project is designed to protect fish and wildlife, ensure fish and wildlife passage, incorporate avoidance and minimization measures and mitigate for adverse impacts as appropriate. The Service will provide technical assistance and comments during the Tier II DEIS review as well as during the permitting process with the U.S. Army Corps of Engineers, under Section 404 of the Clean Water Act, U.S. Environmental Protection Agency's, 404(b)1 Guidelines, and Section 10 of the Rivers and Harbors Act.</p>
Response	Tier 2 documentation will consider means of designing proposed improvements to minimize ecological impacts, such as use of fencing along the right-of-way for safety and measures to minimize impacts on waterways crossed. Ways to avoid or minimize ecological

impacts will be examined, as appropriate, in conformance with the Section 404(b)1 Guidelines as part of Tier 2 and permit approvals required under Section 404 and Section 10.

Commenter **Raddant, Andrew L., Regional Environmental Officer, U.S. Department of the Interior, Office of Environmental Policy and Compliance, Office of the Secretary**

Comment
F-5-7

Bald and Golden Eagle Protection Act/Migratory Bird Treaty Act
Bald eagles (*Haliaeetus leucocephalus*) were federally-delisted in 2007, but remain protected under the MBTA, the BGEPA, and by the state of New York (State) as a threatened species. There are several bald eagle nests, breeding and concentration areas, and roost sites within the project corridor. The highest concentration of bald eagles in the State is along the Hudson River. In addition, two national wildlife refuges, the Montezuma National Wildlife Refuge located in Seneca Falls, New York, and the Iroquois National Wildlife Refuge in the Town(s) of Alabama and Shelby, New York, are located along the proposed high speed rail line. The refuges provide safe areas for bald eagles during the breeding season and during migration. Bald eagles, especially immature eagles, are attracted to carrion found on railroad tracks. We have witnessed an increase in the bald eagle population in the State since 2007. An increase in train speed, especially along the Hudson River, may increase eagle mortality.

The Service recommends that all bald eagle nests, roost sites, breeding, migration (including golden eagles), and concentration areas within the project corridor are identified and NYSDOT plans to minimize impacts to eagles are addressed. Refer to and follow the Service's National Bald Eagle Management Guidelines found on our website:

<http://www.fws.gov/northeast/ecologicalservices/eagle.html>, and contact the Service and NYSDOT to determine if permits are required for the proposed high speed rail project. If you have any questions regarding federal permits under the BGEPA, please contact Sarah Nystrom at the Service's Regional Office in Hadley, MA at 413-253-8952.

The MBTA protects over 1,000 species of birds which includes numerous species that are not considered to be state- or federally-listed threatened or endangered species. As such, the MBTA does prohibit the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Service. The unauthorized taking of birds is legally considered a "take" under the MBTA and is a violation of the law. Neither the MBTA nor its implementing regulations, 50 CFR Part 21, provide for permitting of "incidental take" of migratory birds. However, we recognize that some birds may be killed, even if all reasonable measures to avoid it are implemented. To minimize impacts to migratory birds during the breeding season, important bird areas and, hawk watch sites should be identified, and the breeding bird atlas along the proposed corridor should be consulted. Specific avoidance, minimization, and conservation measures should be included in the Tier II DEIS (e.g., no clearing of vegetation should occur for the proposed project between March 31 to July 15).

Response

Exhibit G-18 in Appendix G identified the presence of state-threatened bald eagle habitat in the Hudson River counties and several counties along Empire Corridor West. In Tier 2, when more detailed plans are developed for the Preferred Alternative (Alternative 90B), the potential impacts to bald eagle habitats and any appropriate avoidance or mitigation measures will be identified. However, it is anticipated that impacts to bald eagles and other protected species will be avoided to the maximum extent possible. Any Tier 2 environmental documentation prepared will address the potential impacts to bald eagles and other protected bird species and proposed mitigation measures.

Commenter **Raddant, Andrew L., Regional Environmental Officer, U.S. Department of the Interior, Office of Environmental Policy and Compliance, Office of the Secretary**

Comment The Service recommends that the applicant visit the Service's Migratory Bird website for

F-5-8 more information (<http://www.fws.gov/migratorybirds/dmbmdbhc.html>). If you require additional information or assistance regarding fish & wildlife resources, please contact Sandra Doran, U.S. Fish & wildlife Service, at 607-753-9334. Future correspondence with the Service on this project should reference project file 2009-TA-064611 0-CPA-0003.

Response The project file number will be referenced in future correspondence with USFWS relating to the New York State High Speed Rail Empire Corridor Program.

Commenter **Raddant, Andrew L., Regional Environmental Officer, U.S. Department of the Interior, Office of Environmental Policy and Compliance, Office of the Secretary**

Comment National Natural Landmark Program
F-5-9 There are ten National Natural Landmarks (NNLs) in proximity to the project corridor. As such, it is recommended that a map be prepared to document the conclusion that only Moss Island NNL occurs within the 2,000-ft wide study area. It should also be noted that Montezuma Marshes carries the NNL designation, and that the Albany Pine Bush Preserve has recently been evaluated and deemed to contain nationally significant resources, and is presently awaiting Secretarial signature for designation as a NNL. Furthermore, the DEIS states that the Empire South section is not expected to have any impacts to natural areas. If this section includes the "Conrail" (as labeled on topographic maps) line along the Hudson River, potential impacts to Iona Island Marsh NNL should be further assessed. It should also be indicated in the table on page 4-176 that Hart's Woods and Bergen-Byron Swamp are National Natural Landmarks.
Please correct the spelling of the Northeast Regional NNL Program Manager's name in the footnote in section 4.16, and in the references, if it appears there. It should read "DiQuinzio," not "DeQuinzio." For questions regarding these specific comments, please contact Deb DiQuinzio, (617) 223-5064, deb.diquinzio@nps.gov.

Response Exhibit G-28 in Appendix G contains a map that shows parklands and National Natural Landmarks that have been designated on the overall study area map. The detailed map for each NNL obtained from the NNL Program Manager was reviewed to identify those NNL's within the 2,000-foot-wide study area for parks and recreational areas. The Montezuma Marsh NNL is shown on this map in Appendix G, but is outside the 2,000-foot-wide study area and located more than 4 miles away. Empire Corridor South extends along the east side of the Hudson River, the Iona Island NNL is on the west side of the Hudson River (more than 1,000 feet from the Empire Corridor) and will not be directly affected by the program. Hart's Woods NNL is also located at least 1 mile away from the Empire Corridor program alternatives. Alternative 125, which is not selected for advancement, would impact the Bergen-Byron Swamp NNL, and the NNL designation has been added to Exhibit 4-36. The Empire Corridor passes to the north of the Albany Pine Bush Preserve, which has been designated as a National Natural Landmark and has also been added to the table. In addition to the parklands section, these three NNLs (Iona Islands, Moss Island, and Bergen-Byron Swamp) within the ½-mile study area for ecology are also referenced in Section 4.13.3 (General Ecology and Wildlife Resources). In addition, the spelling of the NNL Program Manager in Section 4.16 has been corrected.

Commenter **Mitchell, Judy-Ann, Chief, Sustainability and MultiMedia Programs Branch, U.S. Environmental Protection Agency, Region 2**

Comment The Base Alternative is limited in its capability to support the project goals. EPA lacks objections to implementation of the planned improvements.
F-6-1

Response	We agree; the Base Alternative ranks last in meeting performance objectives of the program.
Commenter	Mitchell, Judy-Ann, Chief, Sustainability and MultiMedia Programs Branch, U.S. Environmental Protection Agency, Region 2
Comment F-6-2	However, without detailed impact information, this alternative is rated EC-2- Environmental Concerns, Insufficient Information.
Response	Alternative 90A is not being advanced for further consideration. However, since the work is anticipated to be contained within the right-of-way, it is not anticipated that Alternative 90A will involve substantial environmental impacts, particularly relative to the other alternatives being considered.
Commenter	Mitchell, Judy-Ann, Chief, Sustainability and MultiMedia Programs Branch, U.S. Environmental Protection Agency, Region 2
Comment F-6-3	Physical changes would extend outside of the existing rights-of-way, but due to the nature of a Tier 1 DEIS, these impacts cannot be quantitatively defined. It is for this reason that Alternative 90B is rated EC-2 - Environmental Concerns, Insufficient Information.
Response	Alternative 90B has been selected as the Preferred Alternative. In Tier 2, further evaluation, more detailed plans, and an environmental impact evaluation will be performed, and any required Tier 2 environmental documentation prepared.
Commenter	Mitchell, Judy-Ann, Chief, Sustainability and MultiMedia Programs Branch, U.S. Environmental Protection Agency, Region 2
Comment F-6-4	Physical changes would extend outside of the existing rights-of-way, yet cannot be quantitatively defined in a programmatic DEIS. It is for this reason that this alternative is rated EC-2 - Environmental Concerns, Insufficient Information.
Response	Alternative 110 has not been selected for further evaluation, more detailed plans and an environmental impact evaluation will be performed, and any required Tier 2 environmental documentation prepared.
Commenter	Mitchell, Judy-Ann, Chief, Sustainability and MultiMedia Programs Branch, U.S. Environmental Protection Agency, Region 2
Comment F-6-5	The environmental impacts of a new corridor would be substantial, while the DEIS does qualitatively discuss the impacts, EPA is concerned that the use of a 300-foot (from the centerline of the track) study area, the same as the other alternatives, is not adequate to even qualitatively define the impacts of a higher speed rail alternative. This alternative is rated EC-2- Environmental Concerns, Insufficient Information.
Response	Alternative 125 has been dismissed from further consideration. The study area for each alternative, including Alternative 125, varied depending on the parameter being evaluated. A 300-foot buffer on either side of the corridor was used for identifying potential impacts on land uses, farmlands, surface and ground waters, and wetlands/floodplains, but the buffer was wider for other evaluations, expanding out to 1,000 feet for community/public facilities and parklands and 1/2 mile for ecological impacts and contaminated sites.
Commenter	Mitchell, Judy-Ann, Chief, Sustainability and MultiMedia Programs Branch, U.S. Environmental Protection Agency, Region 2

Comment F-6-6	Chapter 4 Exhibit 4-2-Land Use/Land Cover in the 90/110 Study Area. There are no definitions of "rangeland," "barren land" or "forest land." This should be clarified.
Response	The USGS land use/land cover information categories include the following: rangeland (herbaceous, shrub and brush, mixed), forestland (deciduous, evergreen, mixed), and barren land (dry salt flats, beaches, sandy areas other than beaches, bare exposed rock, strip mines/quarries/and gravel pits, transitional areas, mixed barren land). USGS publications define these categories further. Rangeland historically has been defined as land where the potential natural vegetation is predominantly grasses, grass-like plants, forbs, or shrubs and where natural herbivory was an important influence in its pre-civilization state. Forest Lands have a tree-crown areal density (crown closure percentage) of 10 percent or more, are stocked with trees capable of producing timber or other wood products, and exert an influence on the climate or water regime. Barren Land is land of limited ability to support life and in which less than one-third of the area has vegetation or other cover.
Commenter	Mitchell, Judy-Ann, Chief, Sustainability and MultiMedia Programs Branch, U.S. Environmental Protection Agency, Region 2
Comment F-6-7	For those alternatives that would require additional construction (i.e., alternatives 125, 110, 90B) EPA recommends that the equipment used for construction meets at a minimum Tier 4, if available, or the most stringent engine standard available at the time. We encourage the use of the Northeast Diesel Collaborative Model Construction Contract Specifications and Best practices for Clean Diesel Construction: http://northeastdiesel.org/construction.html#ModelContractLanguage .
Response	In Tier 2, consideration will be given to the Best Management Practices to be used during construction, including the use of the Northeast Diesel Collaborative Model Construction Contract Specification and Best Practices for Clean Diesel Construction.
Commenter	Mitchell, Judy-Ann, Chief, Sustainability and MultiMedia Programs Branch, U.S. Environmental Protection Agency, Region 2
Comment F-6-8	The air quality impacts to communities during the construction phase, especially communities with Environmental Justice concerns, should also be considered. To minimize emissions resulting from construction activities, in addition to using best available technology, an idle-reduction policy should be implemented and enforced during construction operations.
Response	NYSDOT intends to implement an idle-reduction policy, the details of which will be developed in Tier 2 and final design.
Commenter	Mitchell, Judy-Ann, Chief, Sustainability and MultiMedia Programs Branch, U.S. Environmental Protection Agency, Region 2
Comment F-6-9	Even though the Tier I air quality analysis indicates that there is no net increase for criteria pollutants, except for a minor increase in nitrogen oxide, the increase in train service may ultimately increase diesel locomotive emissions at the local level, due to idling. Train idling has been a common concern of communities living near rail yards and train stations. An idle reduction policy and idle reduction technology should be implemented by the train owners and operators as part of a mitigation strategy, in addition to the use of the highest Tier engine available at the time of project completion.
Response	In the formulation of the program's Service Development Plan, consideration is being given to changes and potential increases in diesel locomotive emissions. Overall, the program is

anticipated to reduce automobile use and would result in a net beneficial impact on air quality emissions, when these reductions are factored in.

Commenter **Mitchell, Judy-Ann, Chief, Sustainability and MultiMedia Programs Branch, U.S. Environmental Protection Agency, Region 2**

Comment F-6-10 Section 4.19.1 - General Conformity discussion. While the Conformity discussion is adequate, it presumes that funding will come only from the FRA. If any funding for the project comes from either the Federal Highways Administration or the Federal Transit Administration, Transportation Conformity would apply, and therefore, should be discussed as well.

Response If project funding is provided by the Federal Highways Administration or the Federal Transit Administration, it is recognized that the Transportation Conformity would apply, and it will be discussed as part of the Tier 2 program documentation.

Commenter **Wertz, Trent L., Technical Assistant, Office of Nuclear Reactor Regulation**

Comment F-7-1 This type of activity is not one that the NRC regulates and therefore is not in a position to provide comments on the draft document.

Response The response of the Nuclear Regulatory Commission is recognized relating to the New York State High Speed Rail Empire Corridor Program.

Commenter **Chambers, Tom, Niagara Falls National Heritage Area**

Comment F-8-1 Excellent and much needed project. I prefer the 125 Alternative as the best way to create a competitive transit option that will attract additional visitors and spur economic development, the NGNHA, a unit of the National Park Service, supports this Initiative, pending consultation with local communities and tribal entities.

Response Comments from the public have been considered by FRA and NYSDOT in the selection of the Preferred Alternative, Alternative 90B.

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Commenter	DiMura, John, NYS Canal Corporation
Comment S-1-1	In general, please change all references to the Barge Canal to the New York State Canal System or Erie Canal.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program as both the canal and the rail share a common corridor across the State of New York. The Tier 1 FEIS has been revised with updates to references to the New York State Canal System or Erie Canal. However, the references to the New York State Barge Canal Historic District have been retained, as the official name of the National Register Historic District. Appendix I contains a record of agency correspondence, and a list of streams and waterways was appended to the agency correspondence. Since this list is part of the actual correspondence record, it is not appropriate to change this list.
Commenter	DiMura, John, NYS Canal Corporation
Comment S-1-2	In addition, please make the following changes noted below in red. Deletions are bracketed and additions are underlined: [DETAILS IN LETTER]
Response	<p>The Tier 1 FEIS has incorporated the changes and corrections provided by the New York State Canal Corporation. These include the following revisions identified in your comments that were made as follows to the Tier 1 FEIS:</p> <ul style="list-style-type: none"> • Sections 4.6.3 and 4.14.4: Correction was made to replace "barge canal" with New York State Canal System, in two locations: • Sections 4.16.3 and 4.23.3: Text was corrected as follows: "...Canalway Trail System is comprised of a network of more than 300 miles of existing multi-use, recreational trails across upstate New York." • Sections 4.16.3 and 4.23.3: Text was corrected as follows: "The Canalway Trail System is comprised of four major segments: the Erie Canalway Trail, including the Old Erie Canal State Park Trail in Central New York; the Cayuga-Seneca Canal Trail, the Champlain Canalway Trail, and the Oswego Canalway Trail. Stretching from Buffalo to Albany the 360-mile Erie Canalway Trail, 277 miles of which are presently open to the public, closely follows much of the present and proposed Empire Corridor alignment."
Commenter	Alworth, Tom, Deputy Commissioner for Resources and Partnerships, NYS Office of Parks, Recreation and Historic Preservation
Comment S-2-1	Overall OPRHP supports the idea of High Speed Rail in New York State
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program in the context of potential impacts to parklands. Your comments have been considered by the FRA and NYSDOT in moving forward with plans for high-speed rail by identifying the Preferred Alternative (Alternative 90B).
Commenter	Alworth, Tom, Deputy Commissioner for Resources and Partnerships, NYS Office of Parks, Recreation and Historic Preservation

Comment S-2-2	While it appears that this project will have an overall positive impact for the state's rail transportation system, negative impacts may occur in the longer term for state park and site visitors, particularly from noise, vibration and visual impacts. OPRHP also serves as New York State's agent in administering the Land and Water Conservation Fund Act (LWCF) for the National Park Service (NPS). The Department of Transportation (DOT) must work with the Alternate State Liaison Officer (ASLO) in all matters pertaining to the conversion of LWCF Section 6(f) protected lands.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. Noise and vibration were addressed in Section 4.21 of the Tier 1 EIS, and visual impacts are addressed in Section 4.17. In the Tier 2 process, if conversions are anticipated of Section 6(f)-protected LWCF properties, we will work closely with the Alternate State Liaison Officer of NYSOPRHP to mitigate any potential impacts with parklands or other properties that are managed by NYS Office of Parks, Recreation and Historic Preservation.
Commenter	Alworth, Tom, Deputy Commissioner for Resources and Partnerships, NYS Office of Parks, Recreation and Historic Preservation
Comment S-2-3	Pg. ES-2 -- Second bullet on page Monroe County is listed twice in the paragraph once as an urban county and once as a "more rural" county. It should only be listed once.
Response	This page references both urban centers, such as Rochester within Monroe County, and, in the second reference to rural areas, Monroe County has been deleted.
Commenter	Alworth, Tom, Deputy Commissioner for Resources and Partnerships, NYS Office of Parks, Recreation and Historic Preservation
Comment S-2-4	Exhibit 3-12 and 3-13 are difficult to compare and identify corresponding projects from table to map.
Response	The scale of the mapping in Exhibit 3-12 is intended to geographically show the general locations of proposed improvements, more information on the proposed improvements is provided in the table (Exhibit 3-11).
Commenter	Alworth, Tom, Deputy Commissioner for Resources and Partnerships, NYS Office of Parks, Recreation and Historic Preservation
Comment S-2-5	Exhibit 3-12 Descriptions should include identification of any work or staging areas required outside the rail corridor ROW
Response	At the Tier 1 (conceptual) level, these work or staging areas are not yet known, but would be identified in Tier 2 final design.
Commenter	Alworth, Tom, Deputy Commissioner for Resources and Partnerships, NYS Office of Parks, Recreation and Historic Preservation
Comment S-2-6	Exhibit 3-13 scales of maps and keys are difficult to read and understand.
Response	The intention of the mapping in Exhibit 3-12 is to geographically show the general locations of the proposed improvements. Descriptions of the proposed improvements are provided in the table (Exhibit 3-11).

Commenter	Alworth, Tom, Deputy Commissioner for Resources and Partnerships, NYS Office of Parks, Recreation and Historic Preservation
Comment S-2-7	SRP-3 Metro –North--New 3rd track. (Mp 53 – 63.5). This section of track appears to run through Hudson Highlands State Park Preserve. All construction activities must stay within the existing rail ROW to avoid impacts to parkland.
Response	Thank you for your comment that the new third track between Mileposts 53 and 63.5 passes through the Hudson Highlands State Park Preserve. It is not anticipated that any construction activity will occur outside of the existing railroad right-of-way, which formerly was built with four-tracks. More detailed plans will be developed in Tier 2.
Commenter	Alworth, Tom, Deputy Commissioner for Resources and Partnerships, NYS Office of Parks, Recreation and Historic Preservation
Comment S-2-8	ES-13 Metro-North Poughkeepsie Yard... (Mp 71 – 75.8). This project travels through Quiet Cove Riverfront Park. This park is owned by OPRHP but operated and managed by Poughkeepsie. Impacts to parkland are of concern.
Response	Project ES-13 would be constructed entirely within the existing railroad right-of-way, which once supported multiple tracks and would not have any impact to the surrounding parklands.
Commenter	Alworth, Tom, Deputy Commissioner for Resources and Partnerships, NYS Office of Parks, Recreation and Historic Preservation
Comment S-2-9	ES-05 Hudson Line Reliability Improvements (CP82). This Control Point is within close proximity of Mills Norrie State Parks. A map with better detail would assist in impact analysis. Perhaps showing the project locations in relationship to state lands would provide a more complete picture. Likewise, with the base track improvements between CP99 and MP 105.3 the rail ROW passes through Clermont State Historic Site. More detailed plans and maps are required for these areas to ensure impacts to parkland are avoided. Additionally near MP 130 the rail lines pass under a bridge at Schodack Island State Park. While it is difficult to determine from these maps, it appears that this area is slated for base track, signal, and grade crossing improvements.
Response	<p>Thank you for your comment discussing the possible impacts of a new interlocking and track work on the Hudson Line. Reviewing your comment more closely finds:</p> <ul style="list-style-type: none"> • Construction of a new interlocking at CP 82 near Staatsburg, New York. This new interlocking would be located to the south of the community and away from the Mills Norrie State Park. • It is not anticipated that any of the changes to the track work for CP 99 would be near the Clermont State Historic Site and would not be outside of the existing right-of-way. • The improvements at CP 130 would be within the existing right-of-way near the Village of Castleton south of the bridge for the park.
Commenter	Alworth, Tom, Deputy Commissioner for Resources and Partnerships, NYS Office of Parks, Recreation and Historic Preservation

Comment S-2-10	ES-14 Hudson Station/Track Geometry Improvements (MP 114.5-115). The Ferry Street Bridge is also used for access to the Hudson Boat Launch, which is OPRHP owned property managed by the City of Hudson. Access to the boat launch must be maintained during construction.
Response	Improvements to the rail station at Hudson would be further evaluated in Tier 2. The importance of the Ferry Street Bridge to the community and access to the boat launch is recognized, and would be maintained in studying the constructability of the program.
Commenter	Alworth, Tom, Deputy Commissioner for Resources and Partnerships, NYS Office of Parks, Recreation and Historic Preservation
Comment S-2-11	Exhibit 3-13 – Alternative 90A (Maps 3 & 4). On Map 4 the existing Empire Corridor appears to transect the Old Erie Canal State Historic Park in at least 2 locations. This is not illustrated by this map. Putting the state lands on maps such as these would help to illustrate impacts to state lands as a result of construction, operation, and maintenance of the new track.
Response	The locations of parklands are shown in Exhibit G-28 in Appendix G, Environmental Inventory and Impact Assessment. The intention of Exhibit 3-12 is to geographically show the general locations of improvements proposed as part of Alternative 90A. Putting all resources on these maps would render them unreadable due to the scale of the maps. Further analysis will be conducted in Tier 2, when more detailed plans are developed for the Preferred Alternative (Alternative 90B).
Commenter	Alworth, Tom, Deputy Commissioner for Resources and Partnerships, NYS Office of Parks, Recreation and Historic Preservation
Comment S-2-12	Pg 4-177, State Parks and Recreation Areas, The Canal Corporation is also a land owner of recreational facilities as indicated in comments on Exhibit 4-30 and should be listed along with the Heritage Areas System, State Parks System, State Forests, and Wildlife Management Areas. The Canal Corp. not only manages the NYS Canal System but the series of Canal Lock Parks and the Canalway Trail.
Response	The Overview section in the Existing Conditions, Parks and Recreation Areas includes a description of the New York State Canal System and describes the ownership of the canals and adjoining lands by the New York State Canal Corporation. This upfront section was included to highlight the importance of the canal system as a park/recreational resource in the study area and its integration with other parks and recreation areas. The title of Exhibit 4-37 has been modified to delete NYSOPRHP.
Commenter	Alworth, Tom, Deputy Commissioner for Resources and Partnerships, NYS Office of Parks, Recreation and Historic Preservation
Comment S-2-13	[Exhibit 4-30] Table row 9 “underwater State Park”, the first three columns should read as follows: Hudson Highlands State Park underwater lands State Park Preserve Dutchess County
Response	Thank you for your comments and review of Exhibit 4-37 listing NYSOPRHP State Parks, State Preserves and State Historic Sites. The correction to the row 9 that you shared in your comment was corrected to display the correct title as you shared in your comment.
Commenter	Alworth, Tom, Deputy Commissioner for Resources and Partnerships, NYS Office of Parks, Recreation and Historic Preservation

Comment S-2-14	[Exhibit 4-30] Table rows 21-23 “Schodack Island State Park (undeveloped)”, should have the parenthetic “undeveloped” deleted from all three rows.
Response	Exhibit 4-37 listing NYSOPRHP State Parks, State Preserves and State Historic Sites (rows 21-23) was corrected deleting the reference "undeveloped" for Schodack Island State Park.
Commenter	Alworth, Tom, Deputy Commissioner for Resources and Partnerships, NYS Office of Parks, Recreation and Historic Preservation
Comment S-2-15	[Exhibit 4-30] Table row 24 “Lock 9 State Canal Park”, this facility is not an OPRHP facility and should not be in this table. The facility is under the jurisdiction of and operated by the NYS Canal Corporation.
Response	Exhibit 4-37 has been retitled to delete NYSOPRHP, and your comment is acknowledged that the park at Lock 9 is part of the New York State Canal System.
Commenter	Alworth, Tom, Deputy Commissioner for Resources and Partnerships, NYS Office of Parks, Recreation and Historic Preservation
Comment S-2-16	[Exhibit 4-30] Table row 25 “Guy Park”, this facility is not an OPRHP facility and should not be in this table. The facility is under the jurisdiction of and operated by the NYS Canal Corporation.
Response	Exhibit 4-37 listing State Parks, State Preserves and State Historic Sites (row 25) was corrected for the park at Guy Park at Lock 11 that is part of the New York State Canal System.
Commenter	Alworth, Tom, Deputy Commissioner for Resources and Partnerships, NYS Office of Parks, Recreation and Historic Preservation
Comment S-2-17	[Exhibit 4-30] Table row 31 “State Fairgrounds”, this facility is not an OPRHP facility and should not be in this table. The facility is under the jurisdiction of the Department of Agriculture and Markets. The OPRHP facility is “State Park at the Fair” and is a 0.7- acre field within the fairgrounds with a reflecting pool, tent, and exhibit area.
Response	We have revised Exhibit 4-37 in the Tier 1 FEIS to note the correct ownership of the "State Fairgrounds," as noted in your comments.
Commenter	Alworth, Tom, Deputy Commissioner for Resources and Partnerships, NYS Office of Parks, Recreation and Historic Preservation
Comment S-2-18	Pg 4-181, Section 4.16.4 Environmental Consequences. In cases where the track passes through state park lands but has no direct construction impacts, there are still impacts to state park lands resulting from increased frequency of trains and higher speeds. Seeing trains and train noise could impact the visitors’ experience in a negative way.
Response	Thank you for your comments on the Tier 1 DEIS. Noise and vibration are addressed in Section 4.21, and impacts on visual quality are addressed in Section 4.17. The potential for visual and noise mitigation was noted in Section 4.16.5. However, acknowledgment of potential impacts on parks and recreation areas from train passbys has also been incorporated into the Tier 1 FEIS.
Commenter	Alworth, Tom, Deputy Commissioner for Resources and Partnerships, NYS Office of Parks, Recreation and Historic Preservation

Comment S-2-19	<p>Conservation Funds can also be awarded to municipalities for acquisition and development of municipal parks. These parks, in addition to State Parkland, are also afforded 6(f) protection against conversion to non-park purposes. OPRHP acts as an agent of the National Park Service for conversions under the LWCF. OPRHP must approve all conversions and mitigations (replacement lands) prior to submission to the NPS. Alienation is a restriction by the State on municipal park lands that are proposed to be disused for public park purposes. This requires approval by the State Legislature. There is no requisite for the grant of federal LWCF funds for municipal parkland alienation. A handbook to parkland alienation and conversion can be accessed here:</p> <p>http://nysparks.com/publications/documents/AlienationHandbook.pdf</p>
Response	<p>Thank you for your comments on the alienation of parklands and the availability of further information. In the Tier 1 EIS process, GIS mapping was used for identification of municipal parks that have received Section 6(f) funding. These parks are identified in Exhibit 4-40. In Tier 2, the assessments will further refine, if applicable, parkland identification and impact assessments, including identification of LWCF-funded and municipal parks. If impacts to Section 6(f) parklands may occur, coordination will be performed with NYSOPRHP. If alienation of municipal parkland will occur, approval from the State Legislature will be sought.</p>
Commenter	Alworth, Tom, Deputy Commissioner for Resources and Partnerships, NYS Office of Parks, Recreation and Historic Preservation
Comment S-2-20	<p>Pg 4-262, Section 4.23.3 Existing Conditions, Parks and Recreational Areas. Please correct this section and Exhibit 4-30 to correctly identify recreational facilities and their jurisdictional entity (e.g. OPRHP, NYS Canal Corp, etc.).</p>
Response	<p>The Tier 1 FEIS was revised to correctly identify recreational facilities and their jurisdictional entities that you outlined in your comment.</p>
Commenter	Alworth, Tom, Deputy Commissioner for Resources and Partnerships, NYS Office of Parks, Recreation and Historic Preservation
Comment S-2-21	<p>Pg 4-264 Exhibit 4-59 – National Memorials National Natural Land Marks, National Wildlife Refuges, and National Historic Sites and Preserves within Study Area. The “Federal Land within Hudson Highlands State Park” refers to the “Appalachian National Scenic Trail Corridor” and should be identified as such in this table. It is not part of Hudson Highlands State Park Preserve. Also, “Federal Land within Schodack Island State Park” is not recreational land and is not within Schodack Island State Park. It is adjacent to Schodack Island and is owned by the Army Corps of Engineers. It is used as a dredge spoil deposition site. It should not be identified in this list.</p>
Response	<p>Revisions were made as indicated in your comment, to the Tier 1 FEIS exhibit discussing National Memorials, National Natural Landmarks, National Wildlife Refuges, and National Historic Sites and Preserves within the study area.</p>
Commenter	Alworth, Tom, Deputy Commissioner for Resources and Partnerships, NYS Office of Parks, Recreation and Historic Preservation
Comment S-2-22	<p>Pg 4-265 Exhibit 4-60 – NYS OPRHP State Parks, State Park Preserves, State Historic Sites. This table should be corrected according to comments made above on Exhibit 4-30.</p>
Response	<p>That particular table was not also included in the Section 4(f) section.</p>

Commenter **Alworth, Tom, Deputy Commissioner for Resources and Partnerships, NYS Office of Parks, Recreation and Historic Preservation**

Comment
S-2-23

Pg 4-274 Base Alternative claims no impacts to parks or recreational areas because the alternative is “entirely within the right-of-way, no land acquisitions are anticipated, no impacts to parklands are anticipated.”

Pg 4-274 Alternative 90A asserts that all work can be contained in the existing ROW and no impacts to parklands are anticipated.

Pg 4-277 Alternative 90B explains that there will be no impacts to parklands along the Empire Corridor South because no work beyond Alternative 90A is proposed for this segment. The Empire Corridor West/Niagara Branch claims to have no impacts to parklands even though the rail passes by and through several parks.

Pg 4-281 Alternative 110 claims no impacts to parklands along the Empire Corridor South because no work beyond Alternative 90A is proposed for this segment. Along the Empire Corridor West/Niagara Branch the rail passes nearby or adjacent to parklands but will not directly affect them. Potential impacts are identified for a county recreational facility.

Pg 4-284 Alternative 125 again claims no impacts to parklands along the Empire Corridor South because no work beyond Alternative 90A is proposed for the majority of this segment. A one mile segment from Albany-Rensselaer Station across the Hudson is proposed to be new 125 mph track. No parkland is within this alignment so no parkland impacts are expected. Along the Niagara Branch no additional work beyond Alternative 90A is proposed and thusly will not affect park land. The Empire Corridor West section will have the Alternative 90A projects applied to the existing corridor and a new 125 mph track will be constructed on a parallel alignment or elevated above the existing rail. The segments of parallel alignment may have direct impacts to portions of the Albany Pine Bush Preserve, Old Erie Canal State Historic Park and a handful of municipal parks that have received LWCF funding.

Response

Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. The Tier 1 FEIS describes the potential direct impacts to parklands as a result of the Preferred Alternative and the other prospective alternatives. In Tier 2, the impacts of individual project components of the Preferred Alternative will be further studied and analyzed on adjoining parklands, and, if appropriate, mitigation strategies will be identified. Other impacts (noise, visual) were addressed in other sections of the Tier 1 FEIS. Noise and vibration are addressed in Section 4.21, and impacts on visual quality are addressed in Section 4.17.

Commenter **Alworth, Tom, Deputy Commissioner for Resources and Partnerships, NYS Office of Parks, Recreation and Historic Preservation**

Comment
S-2-24

Be advised that the scale and description of the projects and alternatives identified in this Tier 1 EIS cannot definitively say that there will be no impacts to parkland.

Impacts such as noise, vibration, air quality, access, and visual/scenic impacts will occur temporarily and permanently. These impacts to parks and park visitors will need to be addressed in the future planning/EIS steps.

Alternative 125 will have physical (land related) impacts in addition to those temporary and permanent impacts listed above. The level of detail provided in this Tier 1 EIS is insufficient to identify and analyze those impacts properly. Further detailed information and analysis will be expected in subsequent EIS Tiers as this project progresses.

Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. The Tier 1 EIS discusses the conceptual designs for the prospective corridors for Base, 90A, 90B, 110 and 125 Alternatives. In the Tier 1 FEIS, noise and vibration are addressed in Section 4.21, and visual impacts are addressed in Section 4.17. Air quality impacts are addressed in Section 4.19, and greenhouse gas emissions are addressed in 4.20. Tier 2 will further define the different supporting improvements that will require further analysis as the program moves to design and construction. A more detailed analysis will be performed in the pre-construction phase of each improvement. Alternative 125 is not being advanced for further consideration. In Tier 2, the analysis will address the extent of direct impacts (both temporary and permanent) to parklands of the Preferred Alternative (Alternative 90B).
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Commenter	Debald, Mark, Transportation Program Administrator, Poughkeepsie-Dutchess County Transportation Council
Comment R-1-1	On page 2-9 (Section 2.2.1), please note that in addition to the PDCTC, the Poughkeepsie-Newburgh Middletown, NY MSA is also served by the Orange County Transportation Council (OCTC).
Response	Thank you for your comments on the Tier 1 EIS for the High Speed Rail Empire Corridor Program. The appropriate revisions have been made to this section of the Tier 1 FEIS.
Commenter	Debald, Mark, Transportation Program Administrator, Poughkeepsie-Dutchess County Transportation Council
Comment R-1-2	The 2035 population projection for Dutchess County (page 4-16) seems aggressive. The County's population grew by 52,000 during the 30-years from 1980-2010--a period of relatively strong economic growth, larger household sizes, and greater amounts of developable land when compared to current conditions. Yet, the project shows a growth of 61,000 from 2010-2035, which is a shorter time period that has begun with modest economic growth, smaller household sizes, and more constrained land.
Response	The population growth projections for Dutchess County in the Tier 1 FEIS for the period from 2010 to 2035 were reviewed and are consistent with the population projections available from the Dutchess County Planning and Development Department and provided through the PCTC. These projections forecasted an increase of approximately 40,000 between 2010 and 2025, which would correlate to an even greater increase in 2035.
Commenter	Debald, Mark, Transportation Program Administrator, Poughkeepsie-Dutchess County Transportation Council
Comment R-1-3	For Exhibit 4-6 (page 4-17), please note that the Census Bureau has corrected the 2010 Census data for the City of Poughkeepsie. The correct 2010 population equals 31,045, which is an increase of 995 or 3.3 percent from the 2006 estimate.
Response	The section of the Tier 1 FEIS document you noted in your comment has been reviewed, and the appropriate revisions have been made to this section of the document.
Commenter	Debald, Mark, Transportation Program Administrator, Poughkeepsie-Dutchess County Transportation Council
Comment R-1-4	On page 4-20 (Section 4.3.3), the description of the City of Poughkeepsie as the "de facto center" of the Hudson Valley should be rephrased as "the City and Town of Poughkeepsie," since the Town has a higher population than the City (45,032 compared to 31,045) and the referenced IBM facility is actually located in the Town of Poughkeepsie--the Town is also home to Marist and Vassar colleges, Dutchess Community College, Saint Francis Hospital, and a regional shopping mall. It should also be noted that the cities of Middletown and Newburgh have comparable population totals to the City of Poughkeepsie and are centers in their own right.
Response	The section of the Tier 1 FEIS document you noted in your comment has been reviewed, and the appropriate revisions have been made to this section of the document.

Commenter	Debald, Mark, Transportation Program Administrator, Poughkeepsie-Dutchess County Transportation Council
Comment R-1-5	Please correct the minor typographical error in Exhibit 4-18 (page 4-101), under the column for LWRP Municipalities: "Poughkeepsie (T)."
Response	The section of the Tier 1 FEIS document you noted in your comment has been reviewed, and the appropriate revisions have been made to this section of the document.
Commenter	Debald, Mark, Transportation Program Administrator, Poughkeepsie-Dutchess County Transportation Council
Comment R-1-6	For Exhibits 4-30 (page 4-178) and 4-60 (page 4-265), please note that Quiet Cove Park is a Dutchess County Park and should instead be listed under Exhibits 4-32 (page 4-180) and 4-62 (page 4-267).
Response	The section of the Tier 1 FEIS document you noted in your comment has been reviewed, and the appropriate revisions have been made to this section of the document.
Commenter	Debald, Mark, Transportation Program Administrator, Poughkeepsie-Dutchess County Transportation Council
Comment R-1-7	As indicated in Section 4.21.4 (Environmental Consequences), potential noise impacts will occur under all of the alternatives for Segments 1-4 (New York City through Schenectady), which includes the length of Dutchess County. We therefore request that a detailed noise and vibration analysis be conducted as part of any subsequent Tier 2 study for affected communities within Dutchess County. Special consideration should be made for high-density residential areas and national/state historic sites and parks along the corridor (e.g., Franklin D Roosevelt National Historic Site).
Response	Thank you for your comment pointing out the need for further Tier 2 studies noise and vibration analysis, relating to the High Speed Rail Empire Corridor Program and national and state historic sites and parks along the corridor. In Tier 2, the environmental studies required will include analysis of noise and vibration, as appropriate.
Commenter	Debald, Mark, Transportation Program Administrator, Poughkeepsie-Dutchess County Transportation Council
Comment R-1-8	Please note that the PDCTC approved a new Metropolitan Transportation Plan, titled Moving Dutchess, on November 18, 2011, which supersedes the referenced plan on page 7 of References. Moving Dutchess is correctly referenced in Appendix G (page G-15).
Response	The section of the Tier 1 FEIS document you noted in your comment has been reviewed, and the appropriate revisions have been made to this section of the document.
Commenter	Debald, Mark, Transportation Program Administrator, Poughkeepsie-Dutchess County Transportation Council
Comment R-1-9	Under Appendix B (Ridership and Revenue Forecasting), the 2035 population projection for Dutchess County (page B-24) appears aggressive, considering historic growth trends.

Response	Your comment discussing future population growth has been reviewed and the Tier 1 FEIS is reporting a conservative population growth. The New York Metropolitan Transportation Council projections for Dutchess County indicate an increase in population of 78,656 from 2010 to 2035, which is higher than the Tier 1 FEIS projection of 61,000 for the same time period.
Commenter	Debald, Mark, Transportation Program Administrator, Poughkeepsie-Dutchess County Transportation Council
Comment R-1-10	Under Appendix G (Existing Conditions Supporting Documentation) (page G-2), we request that the hamlets of New Hamburg (Town of Poughkeepsie) and Rhinecliff (Town of Rhinebeck), both located along the Hudson River, also be listed as communities within the Empire Corridor study area.
Response	The section of the Tier 1 FEIS document you noted in your comment has been reviewed, and the appropriate revisions have been made to this section of the document.
Commenter	Debald, Mark, Transportation Program Administrator, Poughkeepsie-Dutchess County Transportation Council
Comment R-1-11	As mentioned earlier, the Census Bureau corrected the 2010 population for the City of Poughkeepsie (31,050), which may lower its ranking among northern Hudson Valley communities (page G-19).
Response	Your comment discussing future population growth has been reviewed. The section of the Tier 1 FEIS you noted in your comment has been reviewed, and the appropriate revisions have been made to this section of the document.
Commenter	Debald, Mark, Transportation Program Administrator, Poughkeepsie-Dutchess County Transportation Council
Comment R-1-12	On page G-24, under "Poughkeepsie," please note that the Walkway Over the Hudson elevator at Upper Landing Park will be completed in spring 2014. Also, the number of visitors to the Walkway, which opened in fall 2009, ranges from 500,000-700,000 annually, making the referenced "750,000 since inception" seem low.
Response	The correction you noted in your comment for the Tier 1 FEIS has been reviewed, and the appropriate revisions have been made to the document.
Commenter	Debald, Mark, Transportation Program Administrator, Poughkeepsie-Dutchess County Transportation Council
Comment R-1-13	On page G-37 (second paragraph), please note that Staatsburg is a hamlet located in the Town of Hyde Park.
Response	The correction you noted in your comment for the Tier 1 FEIS has been reviewed and the appropriate revisions have been made to the document.
Commenter	Debald, Mark, Transportation Program Administrator, Poughkeepsie-Dutchess County Transportation Council
Comment R-1-14	Under Appendix I (Agency Correspondence), the incorporated Village of Tivoli should be included on the list communities for Dutchess County (page I-437), even though it is not a city or town. In general, all affected villages in the State should be included in Appendix I.

Response	Appendix I contains a record of agency correspondence, and the list of communities was appended to the agency correspondence. Since this list is part of the actual correspondence record, it is not appropriate to change this list. Exhibit G-26, Counties, Cities/Towns, and Villages within the APEs, in Appendix G shows the Village of Tivoli in Dutchess County.
Commenter	Eaby, P.G., Todd D., Manager, Project Review, Susquehanna River Basin Commission
Comment R-2-1	We have reviewed the following projects in question [High Speed Rail Empire Corridor Program Tier 1 Draft Environmental Impact Statement: Pennsylvania Station, New York City to Niagara Falls Station, Niagara Falls, NY] and have no comments.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program and your statement advising that the commission has no comments on the document.
Commenter	Sutter, Jr., Charles J., Planner, Westchester County Department of Public Works and Transportation
Comment R-3-1	The primary beneficiary of this HSR program is intercity passenger rail service within the State of New York. This is an objective which Westchester County supports. At the same time, Metro-North Railroad's Hudson Line is an important travel conduit for a significant number of Westchester County residents who commute daily to Mid-town and Lower Manhattan. In 2012, the last year for which figures are available, the Hudson Line provided 15.9 million one way trips. To support this level of ridership, the freight operations of CSX Transportation and Canadian Pacific Railway are restricted on the Hudson Line to evening and nighttime operations. The remainder of the time the Hudson Line is restricted to commuter passenger train operations and 13 Amtrak limited stop intercity trains. Projections through 2035 indicate that freight traffic will continue to increase and forecasts for the Metro-North's Hudson Line through 2020 indicate projected increases of 28 percent. Certain capital improvements are proposed that are of interest to Westchester County. They include: Adding a second track between MP 9 and MP 13 (including the Spuyten Duyvil Movable Bridge), Adding a new Tarrytown pocket track to support Metro-North turn backs without delaying Empire Corridor Service, Add a new signal system between Croton-Harmon and the Poughkeepsie stations-MP 32.8 to MP 75.
Response	<p>Thank you for your comments on the High Speed Rail Empire Corridor Program. Improving passenger rail service and maintaining freight operations along the Empire Corridor is the goal for the High Speed Rail Empire Corridor Program. The projects referenced in your comment to improve operations of both Amtrak and Metro-North Railroad passenger trains between New York City and Albany or Poughkeepsie in the Hudson Valley have been included in the Preferred Alternative, Alternative 90B, (and are part of Alternative 90A, a component of all of the Build Alternatives). The Preferred Alternative includes:</p> <ul style="list-style-type: none"> • Adding a second track between MP 9 and MP 13 (including the Spuyten Duyvil Movable Bridge) • Adding an additional "overtake" track between CP53 and New Hamburg in the Hudson Highlands • Adding a new Tarrytown pocket track to support Metro-North turn backs without delaying Empire Corridor Service, • Add a new signal system between Croton-Harmon and Poughkeepsie stations-MP 32.8 to MP 75. • Upgrading of Track 3 in between CP72 and CP75 in the Poughkeepsie area with

improvements to the Metro North Railroad yard facilities.

Commenter	Sutter, Jr., Charles J., Planner, Westchester County Department of Public Works and Transportation
Comment R-3-2	Westchester County generally supports increased intercity traffic as long as no detrimental impact, including financial, results on the predominant commuter rail service.
Response	The purpose of the High Speed Rail Empire Corridor Program is to introduce higher passenger train speeds on the Empire Corridor and to improve reliability, travel times, levels of train service, and passenger amenities. The program will improve passenger operations for both intercity and commuter rail service and will not have any detrimental impacts on existing or future commuter service.
Commenter	Branton, Donn E., Chair, Genesee County Agricultural and Farmland Protection Board
Comment R-4-1	Although the Board is supportive of improving the rail infrastructure in New York State, it cannot support the construction of a new rail corridor as proposed by Alternative 125. The impact on farmers and farmland, as well as the rural communities along this new corridor would not be justified by the estimated cost and proposed increased level of service of this new alignment. It is the opinion of the Genesee County Agricultural and Farmland Protection Board that the New York State Department of Transportation (NYSDOT) and the Federal Railroad Administration should concentrate its efforts on improving the level of service within the existing corridor as is proposed by the other alternatives in the DEIS. Any such improvements, however, should take into consideration the needs of farmers that work the lands near the corridor. For example, the decision to eliminate or improve at-grade crossings should be done in consultation with County and local highway superintendents and the farming community.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Your comments regarding potential impacts to farmlands and elimination of at-grade crossings in part pertain to Alternative 125, which has been dismissed from further consideration. Alternative 90B along the existing corridor has been selected as the Preferred Alternative. NYSDOT and the FRA will address treatment at specific at-grade crossings during final design.
Commenter	Morse, Hal, Executive Director, Greater Buffalo-Niagara Regional Transportation Council
Comment R-5-1	I am Hal Morse, Executive Director of Metropolitan Planning Organization for the Buffalo-Niagara Region. The twenty-year plan for this initiative would suggest we need to fully consider where we want our state to be in and how this service can help create that future in incremental steps together. There may be series of financial challenges during the phase as well as technology changes involving the shifts, putting corporations robust phase projects and response to the vision would help us to achieve our long-term objectives.

Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor program. The selection of the Preferred Alternative considered options for a future vision for New York State with respect to the future Empire Corridor passenger rail service. Incremental improvements will occur during the course of constructing the different components of the Preferred Alternative. In the construction of the supporting segments for Alternative 90B, the Preferred Alternative, these individual projects could begin conferring travel benefits upon completion of each segment. Full program benefits would be achieved with the completion of all of the segments along the route. The program and implementation will be a collaborative effort and evaluate new technology and a focus on many supporting industries in New York State.
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Commenter	Morse, Hal, Executive Director, Greater Buffalo-Niagara Regional Transportation Council
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Comment R-5-2	<p>I also participate in the Federal Highway Administrative Mega regions initiative. The high speed rail service could possibly consider not so much as New York City and Niagara Falls but rather connecting two huge mega regions and also productivity within each of the two so to provide New York and Ontario crossing efficiency and improve rail services are noted and by national transportation strategy commissioned by the government in the last decade.</p> <p>Some basic services exist in New York City to Toronto, commuter rail service has seen some extensions to Niagara Falls, Ontario. Some service alternatives to Toronto were analyzed by amateur act, and the study they performed for the last decade also. Productivity within and between mega regions is a critical component of their ability to perform in a global level. This is well summarized by the high speed rail coalition documents in 2009.</p>
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Response	Thank you for your comment on the opportunities along the Empire Corridor for connections from Buffalo to Toronto. Currently the High Speed Rail Empire Corridor Program is focused on improvements between New York City and Niagara Falls. The program will improve service that operates along Empire Corridor, including Maple Leaf service that continues into Toronto. Suggestions and recommendations by the public for improvements to the service have been considered in the development of the Service Development Plan and selection of the Preferred Alternative.
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Commenter	DeSantis, Thomas, Senior Planner, City of Niagara Falls
Comment L-1-1	Also, while the study is for the Empire Corridor and the Empire Corridor technically terminates at Niagara Falls, the reality is the Maple Leaf is co-terminus with the Empire Corridor for all but the last 82 miles terminating at Union Station in Toronto, Canada. The benefit to the Empire Corridor for this short, but important, connection is missing from this TIER 1 analysis. At a minimum, a reference should be added.
Response	The scope of the Tier 1 EIS as approved by the FRA focuses on the Empire Corridor from New York City to Niagara Falls, New York. The ridership forecasts do not account for trips into Canada and therefore are conservative. The scope of the program improvements does not extend beyond New York State, but improvements to Empire Corridor service would also benefit trips into Canada and the Maple Leaf service.
Commenter	DeSantis, Thomas, Senior Planner, City of Niagara Falls
Comment L-1-2	Likewise, there was no mention of a potential Buffalo Niagara Falls Express/Commuter Service. This limited service route was identified in the 2009 State Rail Plan. Again, a reference for this proposal should have been given.
Response	The High Speed Rail Empire Corridor Program, as approved by the FRA, is focused on improving rail service along the Empire Corridor from New York City to Niagara Falls. Given the conceptual nature of the Tier 1 evaluation, the Tier 1 EIS does not reference all other commuter rail initiatives underway, but Tier 2 studies may address in more detail coordination with other commuter rail studies, as appropriate.
Commenter	DeSantis, Thomas, Senior Planner, City of Niagara Falls
Comment L-1-3	The City of Niagara Falls strongly supports the purpose and intent of the High Speed Rail Empire Corridor Program without reservation. The City of Niagara Falls is already a committed partner in developing the HSR system in New York, investing over \$5 million over the last decade to enhance the Empire Corridor's anchor station and re-invigorate the international gateway linking the largest Metro area in Canada with the largest Metro area in the USA. Bringing high-speed rail to New York State is or should be one of the State's most important long-range transportation priorities. At a minimum, the final recommendations of this Program must aim to: achieve higher passenger train speeds across the Empire Corridor; improve reliability, travel times, service frequency, and passenger amenities, and significantly increasing ridership, or risk failure.
Response	Thank you for your comments in support of the High Speed Rail Empire Corridor, which have been considered by the FRA and NYSDOT in the selection of the program of improvements identified (Alternative 90B) as the Preferred Alternative. In your comments, you identify many of the objectives outlined in the Tier 1 FEIS to improve intercity rail passenger service along the Empire Corridor between New York City and Niagara Falls.
Commenter	DeSantis, Thomas, Senior Planner, City of Niagara Falls
Comment L-1-4	Therefore, the City of Niagara Falls supports the highest speed option that is deliverable within the shortest time and that will support the largest increase in service frequency (and ridership) across the State—but especially west of Albany.
Response	The High Speed Rail Empire Corridor Program recognizes the importance of trip times, and the FRA and NYSDOT have considered improvements to passenger rail service and their implementation times in identifying the Preferred Alternative. The Service Development

Plan for the Preferred Alternative describes the general implementation sequence of the many projects that make up the Empire Corridor Program.

Commenter	DeSantis, Thomas, Senior Planner, City of Niagara Falls
Comment L-1-5	Currently, cities west of Albany have low boardings due to limited frequency, slow travel time, and poor reliability. System Ridership will increase the most if implementing a 125MPH option. Unfortunately, the cost and time required for implementation leave it less than the optimal choice at this time for New York State. The optimal choice would seem to be establishing 110 MPH as the new base as soon as possible. In addition to the clear costs/benefit analysis supporting the 110MPH Alternative, there is also the projections for economic development in cities with stations. Economic growth in New York is linked to greater mobility and better land use.
Response	Thank you for your comment on the importance on the length of time necessary to achieve travel benefits, which would be the longest for Alternative 125 among the Build Alternatives considered. Alternative 125 has been dismissed from further consideration. Although you indicate a preference for Alternative 110, Alternatives 90B and 110 have similar performance characteristics. Alternative 90B has been identified as the Preferred Alternative, as it balances performance characteristics with costs and impacts.
Commenter	DeSantis, Thomas, Senior Planner, City of Niagara Falls
Comment L-1-6	Alternative 125MPH, an electrified, two-track, grade-separated 283-mile high-speed rail corridor between Albany/Rensselaer and a yet undetermined HSR Buffalo station should be the clear expectation and promise beyond the planning horizon of this study but is not an optimal starting point.
Response	Your comments regarding Alternative 125 have been considered by FRA and NYSDOT in the selection process for a Preferred Alternative, as addressed above.
Commenter	DeSantis, Thomas, Senior Planner, City of Niagara Falls
Comment L-1-7	'Program's' projected schedule for implementation. It is too long and too slow to show any noticeable benefit. Who wants to wait for 25 years to get a somewhat faster train to Albany? This is simply an untenable opening proposal. It must change.
Response	Individual project improvements will become available during the course of constructing the different components of the Preferred Alternative. Alternative 90B will begin conferring travel benefits within 2-5 years of the start of construction. Alternative 125 has been dismissed from further consideration, and a major drawback was that it would not confer benefits until completion of the first major segment, around 15 years after the start of construction or later. The completion of the different program components and implementation of service initiatives were a focus in the development of the Service Development Plan.
Commenter	DeSantis, Thomas, Senior Planner, City of Niagara Falls
Comment L-1-8	Instead of four 5-year construction intervals, begin at both ends of the Corridor simultaneously and double the amount of construction in the first two 5-year construction intervals. The proposed program scheduling, used in the TIER 1, makes only marginal improvements in service in four 5-year steps, and will take 20-25 years to complete (~\$1.75B each four 5-yr intervals). The schedule as proposed cannot become the recommended schedule. Better to make most of the improvements and deliver most of the results in two 5-year cycles of construction, then complete the remaining work over the next

five years and complete the entire program in 15 years—not twenty or more (~\$2.65B each two 5-yr interval, plus \$1.75 per one 5-yr interval).

Response The program schedule and implementation were a consideration in identifying the Preferred Alternative (Alternative 90B). Since 90B requires less right-of-way acquisition than Alternatives 110 and 125, it can be implemented more quickly and at less expense. Program phasing and service initiatives are a focus of the Service Development Plan.

Commenter **Moore, Charles E., Director, City of Rensselaer Planning and Development Agency**

Comment L-2-1 For nearly a half a century a cantilevered walkway on the south side of the Livingston Avenue Bridge made it possible for pedestrians and bicyclists to easily and safely cross the Hudson River between Rensselaer and Albany. New York State's High Speed Rail investment, and replacement of this historic crossing, will provide an opportunity to replace the walkway in a cost-effective and timely manner. Replacement of the Walkway should be identified in each and every alternative scenario outlined by the Empire Corridor Tier I Draft Environmental Impact Statement (DEIS).

Response The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. The FRA and NYSDOT are currently engaged in this work including preliminary engineering and environmental analysis. For more information on the Livingston Avenue Bridge, please visit the LAB project website:
<https://www.dot.ny.gov/display/projects/livingstonavebridge>.

Commenter **Moore, Charles E., Director, City of Rensselaer Planning and Development Agency**

Comment L-2-2 Located in the heart of the region a walkway on the Livingston Avenue Bridge is critical for economic development and quality of life investments needed to sustain a 21st century workforce. Toward that end, the City of Rensselaer has made significant efforts to develop its waterfront to attract tourists, residents, and commercial enterprise. We are working to build a waterfront trail and boardwalk supported with NYS Department of State funds and are actively applying for grants to complete the trail north of the Livingston Bridge. Numerous studies have planned a trail following the river north of the City of Troy. The City of Rensselaer's Common Council passed a resolution in support of restored Bicycle and Pedestrian accommodations on a rebuilt Livingston Avenue Bridge in February of 2012. The not for profit Parks and Trails New York has a good summary of many studies funded with local government, state and federal dollars, that have included recommendations of a rehabilitated walkway on the Livingston Avenue Bridge. Please ensure that the Empire Corridor Tier I Draft Environmental Impact Statement fully acknowledge the decade of planning and development of trails on the Rensselaer side of the River and the critical role the Walkway plays in quality of life and livability for the capital region.

Response The Tier 1 FEIS for the Empire Corridor Program will note the numerous comments received regarding the Livingston Avenue Bridge and the detailed analysis this project will undergo to select the best alternative for this project. For more information on the Livingston Avenue Bridge Project, please visit the LAB project website:
<https://www.dot.ny.gov/display/projects/livingstonavebridge>.

Commenter **Phillips, Jr., Howard T., Supervisor, Town of Haverstraw**

Comment My only comment is that there continues to be a need for high speed rail and improvements

L-3-1	to our transportation infrastructure. In that light, I firmly support the proposed system improvement alternatives to intercity passenger rail services along the 463-mile Empire Corridor. Such improvements will translate into more people utilizing the rail system, more destination alternatives and support of greater economic development.
Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which were considered by the FRA and NYSDOT in selecting a program of improvements (the Preferred Alternative) to advance into Tier 2.
Commenter	McCamphill, Amy, NYC Law Department, Environmental Law Division
Comment L-4-1	The environmental review should include a transportation analysis of new auto, taxi, and pedestrians trips generated by each build alternative and for each build year, so that the potential traffic and other impacts to the streets and sidewalks surrounding Penn Station and the Bronx Station can be evaluated. For the build years 2018 and 2035 and for each alternative, the environmental review should include a breakdown of projected ridership by weekday, peak hour, off-peak hour, weekend, and season. the travel demand assumptions should include: projected vehicle and pedestrian trip generation - trip origin and destination; geographical distribution of where riders are originating; modal split; temporal distribution; vehicle occupancy; the station's access points (entrances and exits) to be affected by the increase in ridership; affected sidewalks, crosswalks, and corners; Levels-of-Service projection for each pedestrian element; and pedestrian/rider flow diagrams.
Response	Detailed traffic modeling would be performed as part of Tier 2 environmental analysis required for the Preferred Alternative, as appropriate.
Commenter	McCamphill, Amy, NYC Law Department, Environmental Law Division
Comment L-4-2	the environmental review should address the following specific impacts: 1. Safety Impacts. The environmental review should include a safety assessment of the impacts to Penn Station and Bronx Station of increased ridership. 2. Cumulative Development Impacts. The environmental review should assess the effects of surrounding development at Penn Station, including 15 Penn Plaza (the Pennsylvania Hotel site), the relocation of Madison Square Garden, and the East Midtown Rezoning. 3. Cumulative Transportation Impacts. The environmental review should assess the effects of future transportation improvements in and around Penn Station, including the Hudson Yards/#7 Subway Extension, the Western Rail Yards, Moynihan Station, the Metro-North Penn Station Access Project, the Gateway Project, and the potential Northeast Corridor improvements.
Response	The High Speed Rail Empire Corridor Tier 1 EIS evaluates a range of corridor-level service improvements for the purpose of making decisions on corridor-level service, including service reliability, service frequency, and train speeds. Section 4.24 and Appendix G.21 address indirect and cumulative impacts. Because this is a Tier 1 assessment, the Tier 1 FEIS does not evaluate the site-specific needs at each of the corridor stations, such as Penn Station. These may be addressed, as appropriate, in either the Tier 2 studies or as part of the individual station projects.
Commenter	McCamphill, Amy, NYC Law Department, Environmental Law Division
Comment	The DEIS includes as a component of all build alternatives the installation of approximately

L-4-3 four miles of second track near and across the Spuyten Duyvil Bridge. This installation would occur adjacent to New York City Department of Parks and Recreation ("Parks Department") property--specifically, Inwood Hill Park, Riverdale Park, and potentially portions of Fort Washington Park. A brief description of the Spuyten Duyvil improvement is contained in a Capital Improvement Project Fact Sheet in the 2005 Plan, but is not included in the DEIS.

The potential impacts on adjacent park property must be evaluated in the environmental review. In particular, the following impacts must be addressed:

1. Pedestrian Bridge/Greenway Impacts. The environmental review should indicate whether the installation of additional track in this section or any proposed changes in service would require replacement or modification of any existing pedestrian bridges. If extensive reconstruction is involved, the Spuyten Duyvil Bridge work should be considered as a potential opportunity for accommodating multiple transportation modes (e.g., a bike path) and expanding the greenway network.

2. Rock or Tree Removal Impacts. The environmental review should identify whether the installation of additional track or the modification of the Spuyten Duyvil Bridge would require rock outcrop removal in the sections near Inwood Hill Park and/or Fort Washington Park.

3. Construction Impacts. The environmental review should identify the type, intensity, and duration of construction activities necessary to install this segment of track, to evaluate construction impacts on adjacent park property.

Response The pre-construction analysis for improvements to the Empire Corridor at Spuyten Duyvil would be conducted as part of Tier 2, and will take into consideration impacts on adjacent parks, before proceeding with any improvements to the tracks and infrastructure along the Amtrak Empire Connection. It is anticipated that any improvements would be strictly limited to within the existing railroad right-of-way, and would include reinstallation of tracks.

Commenter **McCamphill, Amy, NYC Law Department, Environmental Law Division**

Comment **L-4-4** The Catskill and Delaware Aqueducts are essential components of the drinking water supply system for the City and numerous upstate communities. Construction of a third track from New Hamburg to Cold Spring, as proposed in all build alternatives, could result in impacts to the Hudson River Pumping Station ("HRPS") intake; the Delaware Aqueduct Shaft 6 dewatering conduit; the Catskill Aqueduct Hudson River Pressure Tunnel ("HRPT"); and the Hudson River Drainage Chamber ("HRDC"). Potential impacts which must be addressed include:

1. Construction Impacts. Construction work for the third track, including potential blasting of the Breakneck Ridge to widen the existing Breakneck Tunnel, may have damaging impacts to the HRPT and HRDC. These facilities' buildings and some of their equipment are nearly 100 years old. Moreover, construction activities may require relocation or disturbance of the exterior facility appurtenances which are necessary to the HRDC's function.

2. Ingress and Egress Impacts. Construction of the third track will impede access across the tracks to the HRDC and the Shaft 6 outfall for maintenance and normal operations.

3. Land Use Impacts. The construction of the third track will include an increase in the width of the railbed. This will likely extend outside of the existing right-of-way and encroach on City lands. The lands in and around the HRDC and the HRPS are limited in size for their

current operational and maintenance requirements. Any impairment or loss of City lands in and around these and other City assets in the watershed would likely impact operations, and may have a severe impact on the City water supply.

Response Impacts would be evaluated in the pre-construction phase, however, the Breakneck Mountain Tunnel consists of twin bores that can accommodate four tracks, and it should not be necessary to incur any significant disturbance of the mountain or surrounding area. Any additional tracks would be contained within the existing right-of-way, which once supported a four track right-of-way between Garrison and Barrytown a distance of 46 miles.

Commenter **McCamphill, Amy, NYC Law Department, Environmental Law Division**

Comment L-4-5 Accurate Freight Volumes for Impact Analysis. Section ES-2.1 states that "Empire Corridor South has . . . limited freight operations of approximately four trains a day." Section 2.5, Freight Operations, states that "freight service on the Hudson Line consists of through freight limited to a nighttime window and several locals (four) per day." However, freight rail activity into and through New York City is increasing. Therefore, the environmental review should clarify that the freight traffic volumes assigned to the Empire Corridor South throughout the DEIS reflect current, 2014 volumes, and that these estimates incorporate increases in volume (for example, increases associated with the SWMP) that are anticipated in the near future.

Response The Tier 1 FEIS includes operation simulations and supporting modeling that accounted for future growth of freight traffic.

Commenter **McCamphill, Amy, NYC Law Department, Environmental Law Division**

Comment L-4-6 Incorporating Infrastructure Upgrades into the Analysis. The Bronx's Hunts Point Terminal Produce Market ("HPTPM") currently receives over 2,000 loaded, time sensitive produce cars annually via the Hudson Line. Intermodal service is currently prohibited on the Hudson Line due to conflicts with the third rail and the air draft restrictions of many bridges along the line. However, long-term redevelopment plans for HPTPM include major improvements to its rail facilities, including additional sidings, cross-docking platforms, and the capacity to accept unit trains. Please ensure that all freight projections include capacity for increased freight movements to HPTPM via the Hudson Line, including the possibility of handling unit trains bound for HPTPM on the Hudson Line. When considering specific infrastructure upgrades, the environmental review should account for improvements to facilitate freight mobility of industry-standard, double-stack container railcars, including where appropriate: 1) increasing the height of bridges to 22 feet, thereby eliminating existing air draft restrictions, and 2) adjusting the horizontal clearances to accommodate national-standard intermodal well cars.

Response Thank you for your comments on the importance of preserving freight rail traffic capabilities to New York City and the Hunt's Point Terminal Produce Market. The High Speed Rail Program focused both on improving passenger train operations and minimizing the impact of the supporting projects on freight train operations. Several of the projects that are part of improving rail operations on the Hudson Line focus on reducing conflicts between passenger trains and freight movements. As the supporting projects are moved forward, preserving and improving existing overhead and horizontal clearances will be part of the design criteria. It will be a critical part of all new projects to examine potential opportunities to improve the horizontal and vertical clearances for freight on the Hudson Line. Adding greater clearances on the route may be challenged by earlier station construction projects on the Metro-North Railroad area of the route, where high-level platforms in stations or the electric traction third rail system may prevent the movement of freight cars that exceed the current clearance limitations on the route. Most of the new

overhead bridges and pedestrian walkways on the route have been built to the 22-foot clearance as you note in your comment.

Commenter **McCamphill, Amy, NYC Law Department, Environmental Law Division**

Comment L-4-7 Rescheduling Effort from the 2005 Plan. The 2005 Plan identified as part of its preferred scenario a "'clean slate' rescheduling effort" for the Hudson corridor, See 2005 Plan, Sections 2.3.2--2.3.3. The DEIS incorporates a suite of capital improvements from the 2005 Plan into its build alternatives, but does not appear to reference the rescheduling. This should be clarified through the environmental review.

Response The scheduling of supporting projects will be further refined as the FRA and NYSDOT advance the Preferred Alternative for the High Speed Rail Empire Corridor Program, as part of future Tier 2 studies.

Commenter **McCamphill, Amy, NYC Law Department, Environmental Law Division**

Comment L-4-8 Alternatives Analysis. Given the higher capital cost of Alternative 110 compared to Alternative 90B (\$6.25 billion compared to \$5.58 billion, see DEIS Exhibit 6-9), along with the higher operating cost (\$173 million annual compared to \$171 annual, see id.), and the small, arguably negligible differences in operational performance between these two alternatives, the environmental review should more clearly explain the revenue and cost-benefit analyses supporting its conclusion that Alternative 110 is the most cost-effective alternative. DEIS 6-14.

Response The reason Alternative 110 is deemed "most cost-effective" is because it would have the lowest operation subsidy per rider, approximately \$9 per rider vs. approx. \$12 per rider for the next lowest alternative, Alternative 90B. Alternative 90B has been selected as the Preferred Alternative, due to its lower cost, similar operational characteristics, and lower impacts compared to Alternative 110.

Commenter **Colacino, Dick, Supervisor, Town of Arcadia**

Comment L-5-1 My intention is to receive your input and support for the goal of finally bringing passenger rail service to Wayne County. Studies have already been completed which clearly show that adding a station here would generate enough ridership to meet the criteria set forth by both Amtrak and the N.Y. State DOT. The study, completed in 2006 was done specifically for Lyons, N.Y., which is only six miles away from Newark, N.Y., which is located in the Town of Arcadia. While I have supported the initiative in Lyons, the proposal has been delayed for over twenty three years for a multitude of reasons or excuses. Quite frankly, twenty three years is way too long to wait for such a valuable asset for our citizens and visitors to the Finger Lakes Region. In fact, since the 2006 study, various factors have changed which would logically add considerably to the earlier ridership projections. One major factor is our economy and the price of gasoline which has skyrocketed since that time. Our area has also become a vibrant tourist destination with the increasing popularity of the Finger Lakes Wine Trail as well as water sports and relaxing on our beautiful and pristine lakes. Skiing, hiking, biking, snowmobiling, shopping and dining are also very popular in the region along with the Erie Canal and other historic sites. I am prepared to propose an initiative to simply move the stop a short distance to Newark, which would likely have the same ridership or even more than in Lyons due to our central location and proximity to lodging and services. Please keep in mind that the area between Rochester and Syracuse is the longest stretch on the system from New York City to Niagara Falls without a stop.

Response The Tier 1 EIS for the Empire Corridor evaluated a range of corridor-level service improvements for intercity passenger rail with the purpose of making decisions on system

wide level service, including service reliability, frequency, and train speeds. The Tier 1 FEIS considers using the existing stations in each of the alternatives at this time; the inclusion of additional stations along the Empire Corridor could be part of future studies for expanding service.

Commenter **Colacino, Dick, Supervisor, Town of Arcadia**

Comment
L-5-2 Would like a passenger station in Newark, Wayne County. This is an area of NY State with the longest distance between two stations – Rochester and Syracuse – a ridership study a few years ago in Wayne County supports the stop, even if it would stop twice per day in both directions.

Response Currently, the alternatives discussed in the Tier 1 EIS describe the stations that will be served in each option. Additional stations along the route could be considered in the future. The addition of stations to the intercity rail service route would require additional criteria to be met including design, operations, ridership and revenue criteria. Comments from agencies and the public have been considered by the FRA and NYSDOT in selecting a program of improvements to advance into Tier 2.

Commenter **Colacino, Dick, Supervisor, Town of Arcadia**

Comment
L-5-3 Wayne County has been looking for a train station for twenty-four years and I would like to see a train station built in Wayne County from the Town of Arcadia to the Village of Newark. It is the population hub of Wayne County. I'd like to say that the longest distance between two stations is Rochester and Syracuse. That's one reason why I would like to see it built there. We have land along the current railroad tracks. I'm not sure if it would be the same routes that they would be using for the new passenger rail, but hopefully it will be.

I'd like to say that it would bring hundreds or thousands of people to the Finger Lakes area. Right now, as you know, we have over two hundred wineries.

Response Comments from local officials have been considered as part of the Tier 1 DEIS review process. The Tier 1 EIS for the High Speed Rail Empire Corridor Program evaluated a range of corridor-level service improvements for intercity passenger rail with the purpose of making decisions on system-wide level service, including service reliability, frequency, and train speeds. The Tier 1 FEIS considers using the existing stations for each of the alternatives. Your comment on inclusion of an additional station at Newark is noted. Adding new stations along the Empire Corridor could be part of studies for expanding service in the future.

Commenter **Colacino, Dick, Supervisor, Town of Arcadia**

Comment
L-5-4 I would like to also make a comment that I don't think that 105-mile-an-hour speed is High Speed Rail.

Response The operating speeds discussed in the Tier 1 EIS are consistent with the speed thresholds and requirements for different classes of track for high speed rail operations outlined by the Federal Rail Administration (FRA). The FRA characterizes high-speed rail with speeds in the range of 90 to 125 mph as "Regional High-Speed Rail" with the objective to serve mid-sized urban areas on dedicated or shared track.

Commenter **Cunningham, Donald, Town Board Supervisor, Town of Bergen**

Comment
L-6-1 Town of Bergen submits this letter objecting to the proposed project based on the following;

1. The Town of Bergen is directly impacted by the proposed routes for this system with one of the routes completely destroying a linear park with access to a nature center and negatively impacting a National Natural Landmark known as the Bergen Swamp. The other alternative route, along existing rail, cuts directly through our Village increasing safety concerns for motorists and community members.

Response The Tier 1 EIS documents in several sections that the conceptual alignment of Alternative 125 would cross through the Bergen Swamp (e.g. pages 4-93 and 4-132). Although Alternative 125 has been dismissed from further consideration, the alignment used for the Tier 1 EIS analysis is conceptual in nature and only one of several possible alignments that could have been used if NYSDOT and FRA had selected Alternative 125 as the Preferred Alternative. The Preferred Alternative (Alternative 90B) would follow along the existing railroad alignment, which is situated at least two miles south of the Bergen Swamp National Natural Landmark and would not impinge on the swamp itself.

Commenter **Cunningham, Donald, Town Board Supervisor, Town of Bergen**

Comment L-6-2 2. With consideration to the financial investment this program will require the Town of Bergen finds it more prudent to direct funds towards repairs and improvements of existing roads and bridges which have been neglected and underfunded.

3. The Bergen Town Board believes that if a High Speed Rail system was to be successful and prosperous it would be considered, facilitated, and constructed by the private sector. Unfortunately passenger rail has notoriously been unprofitable and a project of this nature would be a waste of valuable taxpayer dollars that could be better utilized improving the existing transportation infrastructure.

Response Comments from the public on the High Speed Rail Empire Corridor Program have been considered by FRA and NYSDOT in the selection of a program of improvements to be carried into Tier 2. The Preferred Alternative was chosen to balance various considerations of concern to the public, such as performance characteristics, costs, and impacts.

Commenter **Hotaling, James A., Town Supervisor, Town of Brutus**

Comment L-7-1 The Brutus Town Board would like to express their interest in establishing a station or hub for the potential high speed rail in our community. Recently, The Town of Brutus and Village of Weedsport approved a Comprehensive Plan that encompasses both communities and one of the objectives is to study the feasibility of developing a commuter rail between Rochester and Syracuse that would pass through the Town of Brutus/Village of Weedsport. Our communities are situated in the center of Cayuga County and are easily accessible from the north/south by using State Route 34 and east/west using State Route 34. We would welcome the opportunity to meet with you to discuss a potential station/hub in our area.

Response Comments from local officials have been considered in the Tier 1 DEIS review process. The Tier 1 EIS for the High Speed Rail Empire Corridor Program evaluated a range of corridor-level service improvements for intercity passenger rail with the purpose of making decisions on system wide level service, including service reliability, frequency, and train speeds. The Tier 1 EIS considers using the existing stations for each of the alternatives. Your comment on the inclusion of an additional station at Weedsport is noted. Adding new stations along the Empire Corridor could be part of studies for expanding service in the future.

Commenter **Mahan, Paula A., Town Supervisor, Town of Colonie**

Comment We all concur that we have fundamental concerns about the safety of the three grade level

L-8-1	<p>rail crossings in Town in the event of high-speed rail traffic. We do not believe the crossings as currently configured would provide the necessary degree of safety for drivers or pedestrians.</p> <p>Several years ago there were discussions about building bridges to carry traffic above the tracks, especially at the heavily trafficked Lincoln Avenue crossing. Perhaps this is an option that can be considered going forward.</p>
Response	<p>As part of the Base Alternative, improvements to grade level rail crossing gates that prevent motor vehicle drivers from attempting to drive around the gates and other warning device systems were to be used in the project limits of the Albany – Schenectady Double Track project between MP 143.2 to MP 160.3, which extends through the Town of Colonie. between approximately MP 151 and MP 154. The Tier 1 EIS anticipates that grade crossing improvements will be necessary for each of the Build Alternatives. The details of these improvements would be developed in Tier 2 for the Preferred Alternative (Alternative 90B). Comments from the public and community officials, relating to the safety of the operation of the high speed trains for both grade crossings and along the right-of-way, were an important consideration for FRA and NYSDOT in selecting the program of improvements (Preferred Alternative).</p>
Commenter	Mahan, Paula A., Town Supervisor, Town of Colonie
Comment L-8-2	<p>Furthermore, if high speed passenger trains are to travel through the corridor, we feel additional studies need to be done regarding noise, sight, or fuel pollution relative to the propulsion system to be utilized.</p>
Response	<p>NYSDOT and the FRA examined the potential for noise, visual, and air quality impacts for the program as documented in the Tier 1 EIS. The Tier 1 EIS evaluated potential noise impacts of the proposed program improvements and concluded that the program would not increase noise levels over the Base Alternative in the corridor between New York City and Schenectady.</p> <p>In the Town of Colonie, the program will occur within an existing railroad corridor and will have no significant visual changes to the character of the rail line.</p> <p>The air quality analysis done for this program shows that no significant adverse air quality impacts are projected. Alternative 90B (the Preferred Alternative) would result in a reduction of approximately 33,000 metric tons per year of greenhouse gas emissions. Although the changes are small in the regional context, the net result is a reduction in all pollutants other than NO_x. The projected increase in NO_x emissions and decrease in VOC emissions represent less than 0.3 percent of emissions in each area (varies by region). The Preferred Alternative will result in a net reduction of 61 tons per year of CO in the New York-New Jersey-Long Island non-attainment area (for 8-hour ozone), with smaller reductions on VOCs (between 1.8 to 4 tons in the five cities analyzed).</p>
Commenter	Mahan, Paula A., Town Supervisor, Town of Colonie
Comment L-8-3	<p>But regardless of the merits of the proposed rail enhancements, the safety of Colonie residents must remain my primary concern.</p>
Response	<p>Thank you for your comment regarding public safety. For NYSDOT and the FRA, public safety is one of the highest priorities. In advancing the Preferred Alternative (Alternative 90B) in Tier 2, the program will be designed and constructed to the appropriate safety standards. Section 2.6 and Chapter 3 of the Tier 1 FEIS address safety considerations and state that further evaluation of grade crossings will be conducted in Tier 2, when a Preferred Alternative is advanced. These evaluations and further design studies to enhance or</p>

eliminate grade crossings will be performed in Tier 2 and final design.

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Commenter	Shavitz, Ian A., Oneida Indian Nation
Comment T-1-1	The [Oneida] Nation has significant concerns about the impacts that the Project could have on historic properties; resources of religious and cultural significance to the Nation; Nation lands; Nation economic enterprises; and the physical environment of the Nation's Reservation.
Response	The concerns of the Oneida Nation are noted and were considered in the selection of Alternative 90B as the Preferred Alternative by NYSDOT and FRA.
Commenter	Shavitz, Ian A., Oneida Indian Nation
Comment T-1-2	<ul style="list-style-type: none"> * FRA's federal trust obligation mandates the protection of Nation resources and lands. * NYSDOT/FRA must protect Nation cultural resources. * NYSDOT/FRA must consider impacts to Nation Lands when planning the Project and selecting an alternative.
Response	If tribal interests may be potentially affected by the program, FRA and NYSDOT will continue to consult with the Oneida Nation, as appropriate, during the process of identifying significant cultural resources in the APE's and identifying measures to avoid, minimize, or mitigate any potential for adverse effects pursuant to Section 106 of NHPA, NEPA, and other applicable legislation.
Commenter	Shavitz, Ian A., Oneida Indian Nation
Comment T-1-3	NYSDOT/FRA must protect Atunyote Golf Course.
Response	The FRA and NYSDOT would like to thank the Oneida Indian Nation for their interest in the High Speed Rail Empire Corridor Program. We are aware of the importance of the Atunyote Golf Course to the Oneida Indian Nation. The Preferred Alternative for the program will follow the existing Empire Corridor rail alignment and will have no impact of the golf course or any lands of Oneida Indian Nation.
Commenter	Shavitz, Ian A., Oneida Indian Nation
Comment T-1-4	When considering performance objectives and environmental impacts, it becomes clear that NYSDOT/FRA should select Alternative 110.
Response	Comments of the Oneida Nation, regarding Alternative 110, were considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B, similar to Alternative 110, will follow the existing rail corridor. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Because of the required property acquisitions, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance.
Commenter	Shavitz, Ian A., Oneida Indian Nation

Comment T-1-5	<p>Alternative 125 is the only alternative that requires a new alignment, on a new right of way in the majority of the Empire Corridor West. This will result in a significant adverse effects and ramifications for the Oneida Nation, and therefore the Oneida Nation does not support NYSDOT/FRA selecting Alternative 125 for Tier 2 study.</p> <p>Alternative 125:</p> <ul style="list-style-type: none"> * Has the greatest potential to destroy Nation cultural resources and historic properties. * Greatest impact on Nation Lands. * Maximum impact on the environment * Greatest Cost Implications <p>It is questionable whether the U.S. Army Corps of Engineers can properly issue a Clean Water Act Section 404 permit for Alternative 125. Given the impacts on Oneida Nation Lands and resources, if NYSDOT/FRA selects the Alternative 125, the representative alignment should not be carried forward.</p> <p>Selecting Alternative 125:</p> <ul style="list-style-type: none"> * Will have significant impacts on Oneida Nation cultural resources, trust land and economic enterprises. * Would require extensive archaeological surveys * Will cross soon to-be acquired Oneida Nation Trust Lands
Response	<p>The comments from the Oneida Nation were considered in the selection of the Preferred Alternative. As documented in the Tier 1 FEIS, Alternative 125 was dismissed in large part based on generally greater potential for impact than the other alternatives. The U.S. Army Corps of Engineers has provided FRA and NYSDOT with comments on the Tier 1 DEIS. Under Section 106 of the National Historic Preservation Act, if tribal interests may be potentially affected by the program, FRA and NYSDOT would continue consultation with the Oneida Indian Nation during Tier 2 level analyses.</p>
Commenter	Toth, MA, MS, Jay, Archeologist, Seneca Nation Tribe
Comment T-2-1	<p>Could you clarify for me how many new bridges and stations are planned for the Niagara Falls-Buffalo-Genesee section?</p> <p>We have worked with NYDOT on incorporating Seneca designs in to bridges and local waysides with Seneca cultural theme.</p> <p>We would be interested in seeing this done on this rail project for the bridges and stations. This concept would add to the tourism interests and reflect positively the history of the area.</p>
Response	<p>There are approximately 41 bridges on the Niagara Branch and three stations from Niagara Falls to Buffalo: Niagara Falls Station, Buffalo-Depew Station, and Buffalo-Exchange Street Station, which have all been reconstructed or modified since the publication of the Tier 1 DEIS. The Seneca Nation's desire to incorporate Seneca motifs into bridge and local wayside designs is noted. If tribal interests may be potentially affected by the program, FRA and NYSDOT would continue consultation with the Seneca Nation under Section 106 of the National Historic Preservation Act as the program progresses.</p>
Commenter	Hartley, Bonney, Assistant, Stockbridge-Munsee Tribal Historic Preservation Office
Comment T-3-1	<p>We are interested in staying a Section 106 consulting party specifically for the portions of the project from New York City to Schenectady, as this portion of the project is within our Stockbridge-Munsee Mohican area of interest.</p>
Response	<p>As program planning and environmental analyses progress at the Tier 2 level, if tribal interests may be potentially affected by the program, FRA and NYSDOT look forward to continuing consultation with the Stockbridge-Munsee to identify properties of significance to the Nation that may be affected by the program and to identify measures to avoid,</p>

minimize, or mitigate any potential adverse effects.

Commenter **Hartley, Bonney, Assistant, Stockbridge-Munsee Tribal Historic Preservation Office**

Comment
T-3-2 In reviewing the maps of the known sites where Native American cultural materials have been found in the APE, we have identified 11 that are of particular concern to us. However, the DEIS does not provide us with specific enough information on the project construction plans to determine the extent to which these sites risk being adversely effected by constructing in new soils, or if all the construction is occurring on already disturbed areas on the existing railway. As the project alternative is finalized and these detailed construction plans are better known, we will review and provide our determination.

Response The comments from the Oneida Nation were considered in the selection of the Preferred Alternative. As documented in the Tier 1 FEIS, Alternative 125 was dismissed in large part based on generally greater potential for impact than the other alternatives. As program planning and environmental analyses progress at the Tier 2 level, if tribal interests may be potentially affected by the program, FRA and NYSDOT will continue consultation with the Stockbridge-Munsee to identify properties of significance to the Nation that may be affected by the program and to identify measures to avoid, minimize, or mitigate any potential adverse effects.

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Commenter	Goss, Raymond A., President, Buffalo and Pittsburgh Railroad, Inc.
Comment RR-1-1	The Buffalo & Pittsburgh Railroad wishes to express its support for the "Base Alternative" that has been presented in the Draft Environmental Impact Statement (DEIS) in regards to the proposed development of a high-speed rail corridor across New York State. Of the options presented, this alternative would enable improvements to Amtrak's Empire Corridor without adversely impacting freight rail operations along the route. We therefore respectfully request your support of the "Base Alternative"
Response	Thank you for your comments, which have been considered as part of the Tier 1 EIS review process. The Preferred Alternative, Alternative 90B, will improve passenger rail service while maintaining freight operations along the Empire Corridor. Alternative 90B would result in better segregation of passenger trains from freight trains than the Base Alternative. The importance of preserving and improving freight rail traffic to the economy of New York State has been an important factor in the selection of a Preferred Alternative.
Commenter	Edwards, Gerard F., Area Representative Real Estate, Canadian Pacific / Delaware & Hudson
Comment RR-2-1	It is obvious from the report the 110 Alternative has the best benefit to cost ratio and should be the alternative pursued.
Response	Thank you for your comments on the 110 Alternative, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Compared to Alternative 110, Alternative 90B will involve lesser costs and impacts, with fewer property displacements, while also achieving the best on-time performance for Amtrak service in 2035. As shown in Exhibit 6-8 of the Tier 1 FEIS, Alternative 90B would also result in the least delay-minutes per 100 train miles operated for freight trains.
Commenter	Edwards, Gerard F., Area Representative Real Estate, Canadian Pacific / Delaware & Hudson
Comment RR-2-2	The study should include an evaluation of options for using the West Shore bypass around Rochester, between CP 359 and CP 382.
Response	Your comments suggesting the evaluation of the use of the West Shore Bypass around Rochester, provides some valuable input. The alternative route you suggest may provide some relief for freight train operations on the main route through Rochester. Your comments have been considered in the review process and the selection of the Preferred Alternative. The Preferred Alternative will add additional trackage (third and fourth tracks) in this general area, but within the Empire Corridor, and the proposed designs will be further refined in the Tier 2 assessment.
Commenter	Edwards, Gerard F., Area Representative Real Estate, Canadian Pacific / Delaware & Hudson
Comment RR-2-3	The study should include an evaluation of the Lake Shore Route West of Buffalo, at least to Cleveland, Ohio, and possibly beyond.
Response	We appreciate your interest in reviewing the Tier 1 EIS for the High Speed Rail Empire Corridor Program, and the idea of extending the study to continue west on the Lake Shore Route west of Buffalo. Currently, the Tier 1 EIS focuses on the alternatives along Empire Corridor that were outlined in the document.

Commenter	Edwards, Gerard F., Area Representative Real Estate, Canadian Pacific / Delaware & Hudson
Comment RR-2-4	Finally- on Page 2-7, the second sentence in the 5th paragraph does not accurately represent field conditions.
Response	Thank you for reviewing the accuracy of the description of trackage in the Tier 1 EIS document. The text in the final sentence was revised and expanded in the Tier 1 FEIS as follows; "West of Rochester at MP 372.2, the Rochester Subdivision continues west with a straight alignment and fairly level topography, which permits 79 mph for passenger trains operating from MP 372.2 to MP 435.4 (within the Buffalo Terminal Subdivision). The eastern limits of Frontier Yard are accessed at CP 434, which also permits movement to the Belt Subdivision, the primary freight train by-pass around the City of Buffalo and the route to the International Railroad Bridge connecting to Ontario, Canada. Passenger train operating speeds, west of MP 435.4 on the Buffalo Terminal Subdivision, are limited to a speed of 60 mph near Frontier Yard and then to 30 mph at MP 436.8. At CP 437, approaching the Niagara Subdivision, the passenger trains increase their maximum operating speed to 60 mph, once they clear the interlocking at CP 437, and then follow the governing speed restrictions for this subdivision."
Commenter	Renjel, Jr., Louis E., Vice President, CSX Transportation
Comment RR-3-1	<p>On May 28, 2010, CSXT and the State of New York entered into a Framework Agreement "concerning any implementation of high speed intercity passenger rail service in New York." Framework Agreement ¶ 2. The Agreement expressly acknowledged that CSXT, and CSXT alone, has "sole discretion" to determine the "use of its property." Id., ¶ 5. Among other things, New York agreed that CSXT, as the owner of the right-of-way, has total and complete authority to determine what constitutes safe rail operations on its own property. The Agreement specifically recognized CSXT's safety guidelines for passenger trains operating on its property, and stated that "in all circumstances CSXT shall have the right to make the final determination as to safe uses of its property." Id.</p> <p>The Agreement provided that "[i]n all cases, and notwithstanding any other provision of this Framework Agreement, CSXT will abide by legal standards and maintain sole discretion with respect to the safety and use of its property." Id.</p> <p>The Agreement also recognized that CSXT, and CSXT alone, has the right—and the fiduciary responsibility to its shareholders—to determine whether a proposed passenger rail line would jeopardize its business. To that end, the Agreement provided that "CSXT and New York acknowledge that CSXT, as a wholly-owned subsidiary of a public corporation, has the responsibility to solely determine the freight capacity that CSXT must retain to accommodate future operations." Id., ¶ 6.</p> <p>With regard to potential liability arising from passenger operations on its property, the Agreement provided that "New York acknowledges that if the [Empire Corridor] Projects are implemented, CSXT will require adequate protections from potential liability arising from the operation of passenger rail service, consistent with law and precedent." Id., ¶ 7. Finally, the Agreement expressly recognized that New York must bear the massive cost of land acquisition, as well as the cost of any diminishment in value of CSXT's property rights. The Agreement stated: "New York acknowledges that it has a legal and constitutional obligation to justly compensate CSXT for any of its property rights acquired or used by New York, as well as for any diminishment in value of those rights to the extent permitted by law." Id., ¶ 8. The Agreement further recognized the considerable value of the property—and of CSXT's operations on the property. It provided: "New York acknowledges that the CSXT corridor that is the subject of this Framework Agreement is today the single busiest on the CSXT network and has tremendous opportunity for additional freight demand, including from the expansion of the Panama Canal. Accordingly, the property that would be</p>

impacted by the [Empire Corridor] Projects is among the most valuable freight corridors in the United States.” Id

Response New York State recognizes CSX Transportation’s role in supporting and participating in the High Speed Rail Empire Corridor Program, and their rights for determining the use of their property as outlined in the “Framework Agreement.” CSX Transportation is considered a leading partner in creating a vision for improved freight and passenger service in New York State. In moving the program forward New York State recognizes the valuable contribution that CSX Transportation offers both to the state and the nation’s freight railroad network. New York State shares with CSX Transportation the important goals of promoting economic revitalization along the Empire Corridor, and minimizing any impact to freight train operations from increased passenger train operations. Compared to Alternatives 110 and 125, Alternative 90B will involve lesser costs and impacts, with fewer property displacements, while also achieving the best on-time performance for Amtrak service in 2035 and the least delay-minutes per 100 train miles operated for freight trains. In 2035, Alternative 90B would also result in one of the lowest trip times for freight between Selkirk Yard, outside Albany, and Buffalo. In selecting Alternative 90B as the Preferred Alternative for the High Speed Rail Empire Corridor Program, the FRA and NYSDOT chose a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts. The Framework Agreement is discussed in the Executive Summary (Section ES-1) in Volume 1 of the FEIS. The agreement between New York State and CSX Transportation is also discussed in Chapter 1 – Section 1.1.3 and Appendix J.

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment RR-3-2 As currently presented, the 90 and 110 alternatives do not satisfy CSXT’s safety standards and are not safe uses of its property.

Response As noted in Chapter 3 of the Tier 1 FEIS, each of the Build Alternatives analyzed would be designed in compliance with design criteria found in American Railway Engineering and Maintenance-of-Way Association (AREMA) as well as Amtrak and CSXT design standards. In addition, implementation of safety measures such as Positive Train Control (PTC) will be included in the design and construction of each of the alternatives. It is also anticipated that crash energy management measurements will be included in the design criteria for each concept alignment.

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment RR-3-3 Alternative 90A is not acceptable from a safety perspective because it would increase the co-mingling of passenger and freight traffic on a busy shared track. The greater the amount of passenger and freight co-mingling on a shared track, the greater the risk of an accident.

Response Passenger and freight trains are currently comingled on CSXT’s right-of-way. The Preferred Alternative, Alternative 90B, will provide additional trackage to better segregate passenger rail and freight rail, thereby improving safety of rail transportation on the Empire Corridor. Approximately 370 miles of new track will include about 300 miles of third track in the Mohawk Valley, where CSXT freight operates west of Albany. The Preferred Alternative, Alternative 90B, includes all of the improvements included in Alternative 90A. NYSDOT maintains that Alternative 90A would not increase the risk of an accident due to the twenty separate capital improvement projects. The improvements proposed as part of Alternative 90A (and Alternative 90B) include improvements to the signaling system and Positive Train Control system, which would increase safety over existing conditions. As discussed in Section 3.3.2 of the Tier 1 FEIS, this alternative would increase the number of daily round trips between Albany and Buffalo by four trains from four to eight. Between New York City and Albany, a route with only four freight trains per day, Alternative 90A would add three daily round trips above the 16 existing trips.

Commenter	Renjel, Jr., Louis E., Vice President, CSX Transportation
Comment RR-3-4	The scheme of crossovers, interlockings and grade crossings proposed in the DEIS will heighten the risk of an accident and will jeopardize the safety of passengers, train crews and the public. The DEIS offers no assurance that all of this can be accomplished safely.
Response	<p>NYSDOT remains committed to the safety of the travelling public and all users along the corridor. One of the Empire Corridor Program's objectives is to "minimize interference with freight rail operations."</p> <p>To achieve this, each of the Build Alternatives includes rail improvements projects currently planned and funded; these improvements would improve the service levels and operations as well as safety (see Tier 1 FEIS Section 3.3).</p> <p>Eight improvement projects would be included in all Build Alternatives with additional signal system improvements and grade separated flyovers included in certain Alternatives to eliminate potential conflicts with freight train movements. New interlockings, added crossovers, reconfigured signals, pocket tracks and new additional separate and elevated trackage in some Build Alternatives would further increase safety along the corridor.</p> <p>The Rail Network Operations Simulation study conducted as part of the Tier 1 DEIS (see Appendix D) concluded that there would be improvements to operating speeds and times for freight operations. It is further noted that the Tier 1 EIS concept alignments in all of the alternatives would be designed to comply with design criteria found in AREMA as well as Amtrak and CSXT design standards in Chapter 3, under the discussion of the Preferred Alternative (under "Safety").</p>
Commenter	Renjel, Jr., Louis E., Vice President, CSX Transportation
Comment RR-3-5	<p>With regard to Alternative 110, it is not clear whether the DEIS contemplates that the passenger trains will be operating in excess of 90 m.p.h. in locations where there is less than 30 feet of separation between the freight tracks and the passenger tracks. Compare DEIS at ES12-13 (stating that such tracks will have a speed limit of 90 m.p.h.) with DEIS App. A Drawing Nos. 110-7 through -10, -12, -14, -15 (depicting stretches of a second passenger track spaced 15 feet from the freight tracks and with the same speed limit of 91-110 m.p.h. as the first passenger track). If the DEIS does contemplate passenger trains exceeding 90 m.p.h. in these locations, that would present an unacceptable safety risk. There would not be adequate separation to protect against potential encroachment by maintenance crews, or the wind forces generated by passing high-speed trains. Moreover, in the event of a derailment, there would be a high risk of the derailed train obstructing an adjacent track. See Chen-Yu Lin & Mohd Rapik Saat, "Semi-Quantitative Risk Assessment of Adjacent Track Accidents on Shared-Use Rail Corridors" 4 & tbl. 2, 2014 Proceedings of the Joint Rail Conference (finding a higher likelihood of derailment obstructing the adjacent track at spacing of 15 to 30 feet than when tracks are 30 to 55 feet apart). The likelihood of an intrusion increases with train speed, given the amount of energy that must dissipate before a train stops. Id. at 6 & tbl. 7. And the denser the traffic on the corridor, the more likely that such an intrusion causes an accident. Id. at 7.</p>
Response	<p>It is not planned for trains in the 110 Alternative to operate in excess of 90 mph where the requirements, as outlined in the "Framework Agreement," require the 30-foot separation. In Section ES-3.2.4 under the heading Alternative 110, the following is stated: "Due to existing physical conditions that would make it impractical to achieve the 30-foot separation, there would be sections of third main track located 15 feet from the existing track. In these instances, the Maximum Authorized Speed would be reduced to 90 mph." Appendix A drawings are consistent with this statement.</p> <p>In accordance with FRA requirements, the tracks for the Preferred Alternative (Alternative 90B) must be maintained to meet Class 5 FRA Track Classifications (90 mph maximum speed limits for passenger tracks inclusive of civil curve restrictions). In order to reduce the risk of derailments and increase safety, countermeasures could be included that meet a</p>

higher standard for the FRA Class 6 track classification (up to 110 mph operation) to allow for an extra degree of protection. These countermeasures that could be undertaken to avoid or minimize derailments include increased weekly track, switch, and signal inspection frequencies concurrent with semi-annual ultrasonic rail testing of open track, turnouts, and crossovers, even on those rails within the transit track with track/traffic densities of less than 30 million gross tons annually.

These additional (Class 6) countermeasures could include annual automated track inspections, using the latest technology and best practices. Similarly, the adjacent CSXT tracks could be subject to the same type of condition assessment. Any exceedances above registered benchmarks would be recorded on the passenger track and also on the next adjoining CSXT track.

In addition, conditions assessments (typically required for Class 6) could be also be performed by scheduling bi-annual joint CSXT/Amtrak management level track and signal inspections. If conditions show degradation, the joint inspection with management and track inspectors can verify in the field degradation and slow order penalties can be assessed for exceedances of registered benchmarks to mandate corrective actions and needed repairs and enforce compliance status.

Another preventative measure for reducing the chance of derailments is rolling stock maintenance. Assessments of vehicle components, such as wheels, brakes, etc. will be an integral part of the maintenance program.

These countermeasures could be the subject of discussion among NYSDOT and CSXT during advanced design of the Preferred Alternative and incorporated into the MOU.

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment RR-3-6 On the other hand, if the DEIS does not contemplate passenger trains operating in excess of 90 m.p.h. in locations where there is less than 30 feet of separation, then its travel-time projections may not be accurate and may require adjustment. Because the DEIS does not clearly identify the parameters used in the operations simulation and the study itself is ambiguous, it is unclear how New York and the FRA have addressed this crucial issue.

Response The rail network operations simulation (Appendix D of the Tier 1 FEIS) conducted for Build Year 2035 accurately reflects the conceptual design and the terminus-to-terminus travel times account for areas of decreased maximum operating speeds due to limitations imposed by track geometry or civil constraints. The parameters used in the rail simulation are described in Section 2, Methodology in Appendix D, "Rail Network Operations Simulation." In developing the simulation model for the 110 Alternative, maximum authorized speeds (MAS) used were consistent with "Framework Agreement" (Appendix J). However, the Preferred Alternative is 90B, which has an MAS of 90 mph.

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment RR-3-7 Alternatives 90A, 90B and 110 are unacceptable for another reason: they will deny CSXT the capacity it needs to handle current and future traffic on the line, causing significant economic harm to upstate New York. In this context, capacity means the ability of CSXT to make full use of its own property in order to meet its common-carrier obligations now and in the future.

Capacity is a valuable and limited resource. Operating a passenger rail service on or next to CSXT's mainline would limit the number of train slots available for freight traffic. It would also prevent CSXT from using additional land within its right-of-way to accommodate increased volume in future years. This would be a particularly troubling development in light of the widespread recognition that demand for freight traffic is increasing and capacity will need to expand to meet this heightened demand. The U.S. Department of Transportation projects a 46 percent increase in rail freight between 2011 and 2040. See Freight Facts and Figures 2012 tbl. 2-1, <http://1.usa.gov/Qpp8js>; see also Ass'n of Am. Railroads, National Rail Freight Infrastructure Capacity and Investment Study (2007). CSXT

anticipates using additional land within its right-of-way to expand capacity and handle the increased traffic.

Response Development of the supporting Rail Network Simulations were a collaborative process with team members from NYSDOT, CSXT, LTK (who led this task); supported by Willard Keeney and HNTB. The CSXT staff from their offices in Jacksonville, Florida were participants in these simulation exercises and expressed no objection to the parameters employed in assigning track and slot capacity. Building the network simulation followed a joint effort that began in 2012 and continued through 2013, with the results of the simulations included in Appendix D of Volume 3 of the Tier 1 FEIS for the High Speed Rail Empire Corridor Program.

The network simulation identified sufficient capacity to operate both the future forecasted passenger and freight demand with the improvements proposed under each Build Alternative. CSXT provided a forecast for freight traffic and modeled CSXT dispatching practices in the deployment of freight and passenger trains to produce the travel time forecasts for Alternatives 90A, 90B (the Preferred Alternative) and 110 as discussed in the Tier 1 FEIS.

In 2011, the Baseline Simulation Report was advanced following receipt of review comments received from CSXT to reflect changes in train volumes and routing. The Amtrak Baseline Simulation OTP was recomputed based on CSXT model changes, giving Amtrak higher dispatching priority. Amtrak On-Time Performance was returned to CSXT for review. CSXT provided e-mail approval of the revised Baseline Simulation Model. This coordination with CSXT and their inputs is documented in Appendix D, "Rail Network Operations Simulation," Section 2.1.

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment RR-3-8 Of the many types of freight that move over the line today, intermodal traffic is the most service-sensitive. Approximately 20 intermodal trains use the line today, connecting the western and midwestern United States with New York City, New England, and the East Coast. Intermodal traffic will grow dramatically in the years ahead. To serve this increased demand, CSXT is developing a major new intermodal terminal near Montreal that will connect the Canadian markets with New York and other

Response The planning and design for all alternatives were coordinated with freight rail considerations. Baseline operations simulation as well as increases to service were obtained from CSXT. Facilitation of freight movement was identified as an element of purpose and need. Increases in freight traffic was included in the baseline modeling efforts. Localized controlled sidings, passenger bypasses, and dedicated freight/passenger track segments have been proposed to minimize congestion and minimize reduced speeds resulting from operations of freight and passenger trains on each alternative. Careful operations and dispatching will be required to minimize interferences accruing from increased demand from intermodal and passenger traffic. Intermodal freight would potentially benefit from the proposed addition of dedicated passenger and freight tracks. Intermodal traffic can be prioritized to minimize interference with time-sensitive movements. Other alternatives could be explored by developing a series of joint improvements both for station access and layouts and track/signal systems and alignment. In addition, operations and dispatching through off-peak use of the railway for freight traffic could be considered during later stages of the program.

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment RR-3-9 There are no comparable planning studies devoted to promoting economic growth through expanded passenger rail service.

Response	The economic benefits associated with expanded passenger rail service have been included in various studies, as discussed in DEIS Pages 1-12, 2-10, and 2-11.
Commenter	Renjel, Jr., Louis E., Vice President, CSX Transportation
Comment RR-3-10	<p>Hundreds of New York businesses depend on access to the Empire Corridor and, through it, the national rail network. Examples of New York-based businesses that depend on CSXT include Eastman Kodak, Sunoco, ADM Milling, Bestway Distribution Services, Trigen Syracuse Energy Corporation, LiDestri Foods, Anheuser-Busch, and Gas Supply Resources Holdings.</p> <p>The CSXT network also connects to seven short-line railroad partners on the Empire Corridor: Depew, Lancaster & Western Railroad (interchanging at Batavia); Rochester & Southern Railroad (Rochester); Livonia, Avon & Lakeville Railroad (Genesee Junction); Ontario Midland Railroad (Newark); New York Susquehanna & Western Railway (Syracuse, Utica); Mohawk, Adirondack & Northern Railroad (Utica); and Finger Lakes Railway (Solvay). In 2012 alone, more than 30,000 shipments were moved to or from these partners. Because the CSXT network is a critical feeder—in some cases, the only feeder—to each of these railroads, any degradation in service on the CSXT mainline would not only threaten the many New York-based businesses that these short-lines serve, but also the competitiveness and viability of the short-lines themselves.</p>
Response	<p>The planning and design for all alternatives were coordinated with freight rail considerations. Base line operations simulation as well as increases to service were obtained from CSXT. Facilitation of freight movement was identified as an element of the program's purpose and need. Increases in freight traffic was included in the baseline modeling efforts.</p> <p>Localized controlled sidings, passenger bypasses and dedicated freight/passenger track segments have been proposed to minimize congestion and minimize reduced speeds resulting from operations of freight and passenger trains on each alternative. Careful operations and dispatching will be required to minimize interferences accruing from increased demand from intermodal and passenger traffic. Local, short-line freight would potentially benefit from the proposed addition of dedicated passenger and freight tracks and added crossovers, which would provide additional flexibility. Short-line freight traffic can be prioritized to minimize interference with time-sensitive movements. Other alternatives could be explored by developing a series of joint improvements both for station access and layouts and track/signal systems and alignment. In addition, operations and dispatching through off-peak use of the railway for freight traffic could be considered during later stages of the program.</p>
Commenter	Renjel, Jr., Louis E., Vice President, CSX Transportation
Comment RR-3-11	<p>Alternative 90A contemplates doubling the number of passenger trains on CSX's existing freight line. Because passenger trains are given dispatching priority over freight trains, the result would be delayed shipments and greater uncertainty for customers as to when a shipment will be picked up and when it will be delivered.</p> <p>Alternatives 90B and 110 would also have a severe and harmful impact on freight traffic. As explained in detail in the attached Declaration of Cressie Brown, "CSXT freight service cannot function at acceptable levels of reliability under Alternatives 90B and 110. . . . The core of the operational problem is that both alternatives propose numerous at-grade crossings to allow access to the many customers, switching facilities, branch lines, and short-line railroads that would be separated from the mainline freight tracks by the proposed passenger tracks. Dozens of times every day, freight traffic would have to wait unpredictable amounts of time for clearance from the passenger dispatcher to serve customers and reach yards. With narrow time windows for crossings, the inherent variability in freight service schedules, and a high volume of operations, freight service on the Empire Corridor would become gridlocked." Brown Decl. ¶¶ 8-10.</p>

Response	Alternative 90A includes many upgrades to the existing track structure and right-of-way to increase capacity and facilitate the movement of additional mixed freight and passenger traffic to meet the projected additional passenger and freight demand. Projections for freight trains under each of the Build Alternatives were conducted in cooperation with CSXT with data provided by CSXT. In Appendix D of the Tier 1 FEIS, the Rail Network Operations Simulation model identified sufficient capacity to operate both the future forecasted passenger and freight traffic provided the improvements outlined for each alternative are built. Similar to the simulation results for Alternative 90A, the simulation results for Alternatives 90B (the Preferred Alternative) and 110 used a CSXT-provided forecast for freight traffic and modeled CSXT dispatching practices in the deployment of freight and passenger trains to produce the travel time forecasts reported in the Tier I FEIS. As noted throughout Section 3.3 of the Tier 1 FEIS, final design will include a detailed evaluation of the need to construct additional crossovers, flyovers, and interlockings to allow freight trains running on the south side to crossover the new passenger mains to reach freight facilities on the north side.
Commenter	Renjel, Jr., Louis E., Vice President, CSX Transportation
Comment RR-3-12	In the locations where they contemplate building a new, passenger-only track on CSXT's right-of-way, Alternatives 90B and 110 would create a physical barrier between CSXT and its customers on the north side of the track—a wall depriving well over 120 New York businesses of vital access to the national rail network. Maps and lists of those customers are attached to this Comment. The barrier would restrict future business growth in upstate New York by hampering companies interested in shipping their goods by rail. The expensive and complex process of building fly-overs—overpasses for passenger trains—is not a realistic alternative for a prospective new business, and would not even be physically possible in many locations.
Response	The new mainline tracks in Alternatives 90B (the Preferred Alternative) and 110 would be at-grade and include turnouts for freight trains to continue to access existing customers; this represents no change in access from the present day. Rather, the proposed additional turnouts and crossovers would provide greater operational flexibility than the simulation results in the Tier I FEIS demonstrates (see Appendix D). This will allow the corridor to handle the projected increases in both freight and passenger train volumes through 2035, while minimizing conflicts and reducing delays for both services. Localized controlled sidings, passenger bypasses, and dedicated freight/passenger track segments can be used to minimize congestion and reduced speeds resulting from operations of freight and passenger trains on each alternative. The proposed flyovers are a capital intensive, but effective infrastructure improvement that could be designed to reduce passenger/freight interference. The concepts for the three flyovers presented in this Tier 1 FEIS would be developed further in Tier 2 design. Other alternatives could be explored by developing a series of joint improvements both for station access and layouts and track/signal systems and alignment.
Commenter	Renjel, Jr., Louis E., Vice President, CSX Transportation
Comment RR-3-13	New York explained in a recent filing with the Surface Transportation Board that the “success of NYSDOT’s policies and initiatives to reverse past disinvestment in rail infrastructure and build a thriving rail transportation system for New York, is dependent upon preserving and developing new rail sidings, rail-truck transfer facilities, yards and ‘lastmile’ connections serving terminals and shippers.”
Response	The Tier 1 FEIS is a part of NYSDOT’s efforts to reverse past divestment in rail infrastructure. Localized projects within the Tier 1 FEIS (Tier 2), including the implementation of localized controlled sidings, passenger bypasses, and dedicated

freight/passenger track segments, are proposed to minimize congestion and minimize reduced speeds resulting from operations of freight and passenger trains on each alternative.

This program will benefit both passenger and freight rail and represents a major capital investment in the rail infrastructure in the region.

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment RR-3-14 ¹The barrier [new passenger tracks on CSXT right-of-way under Alternatives 90B and 110] would also prevent maintenance crews from entering the right-of-way in their usual fashion—driving standard vehicles into the right-of-way from a crossing—and instead require them to use specially-equipped vehicles that can ride on the rails, further disrupting traffic because on many occasions, this special vehicle (a “hi-rail truck”) would have to stay on the rails, thereby rendering that track unusable for any trains during the entire duration of the maintenance event.

Response Nearly all modern railways use hi-rail vehicles to access and maintain track and facilities along the right-of-way. Similar to other rail lines, maintenance work would need to be scheduled off-peak/weekend so as not to interfere with passenger/freight traffic. The additional dedicated passenger track will not eliminate existing grade crossings, however, access and maintenance will need to proceed in a safe manner, consistent with similar railways.

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment RR-3-15 A state may not circumvent NEPA by following a tiered approach and deferring the necessary analysis to Tier 2 on the theory that it cannot determine environmental impacts at the Tier 1 stage.

Response FRA and NYSDOT have not circumvented the National Environmental Policy Act (NEPA). The agencies have followed NEPA and all appropriate regulations and procedures in preparing the Tier 1 EIS (including necessary analysis) for the Empire Corridor. Tiered environmental review is a well-established practice. The Council on Environmental Quality (CEQ) regulations encourage agencies to “tier their environmental impact statements to eliminate repetitive discussions of the same issues and to focus on the actual issues ripe for decision at each level of environmental review.” 40 CFR 1502.20; see also 1508.28. Section 8.g. of DOT Order 5610.1C further encourages tiered environmental documents for “complex transportation proposals.” The program area encompasses 464 miles of trackage along Empire Corridor and the Niagara Branch, spanning three different railroads (Metro-North Hudson Line, CSXT Empire Corridor West, and the Niagara Branch), connecting the largest metropolitan areas in the state (including New York City, Buffalo, Rochester, and Syracuse). The Tier 1 evaluation focused on concepts to be examined in more detail in Tier 2, ranging from minimal improvements (Base and Alternative 90A) to an exclusive sealed high-speed rail corridor (Alternative 125). Alternative 125 would involve construction of a total of 236 miles of double track on new corridor alignment along three different segments: Rensselaer to Syracuse, Syracuse to Rochester, and Rochester to Buffalo. Tier 2 would focus on the Preferred Alternative developed through Tier 1 EIS evaluations, which included an extensive agency consultation and public participation process

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment RR-3-16 An Environmental Impact Statement issued by an agency of New York State must also satisfy SEQRA.

Response NYSDOT has determined that the Tier 1 EIS prepared for the Empire Corridor meets New York State Environmental Quality Review Act (SEQRA) requirements, as discussed on page 4-1 of the Chapter 4, Environmental Consequences of the Tier 1 Final EIS: “The Tier 1 EIS has been prepared in accordance with the National Environmental Policy Act of 1969

(NEPA) and its implementing regulations (40 Code of Federal Regulations [CFR] Parts 1500-1508); FRA's NEPA procedures (64 Federal Register [FR] 28545 and 78 FR Part 2713); and the New York State Environmental Quality Review Act (SEQR). NYSDOT, as the SEQR lead agency, has determined that the variance procedures under SEQR (17 NYCRR Part 15) apply."

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment RR-3-17 If a passenger rail system is constructed on CSXT's right-of-way, there will be very harmful environmental consequences, as freight traffic shifts from the rails to the highways. The result will be more congestion on the roads, increased emissions of greenhouse gases by the armies of trucks necessary to carry the displaced freight, and less opportunity for environmentally- sensitive freight rail to grow in the years ahead. CSXT also has a strong interest in avoiding the increased environmental harms to its property—including noise, vibration and pollution—that would be caused by the additional passenger traffic.

Response The analysis in the Tier 1 FEIS shows that the program alternatives are neutral towards, or enhance freight operations, which includes CSXT-provided projections of future growth in freight traffic by 2035. Section 1.5 of the Tier 1 FEIS establishes six measurable performance objectives based on the program purpose and need. All alternatives were measured against these performance objectives, including the objective to minimize interference with freight rail operations and avoid degradation of freight service. Section 6.3 of the Tier 1 FEIS describes how the program alternatives affect freight train operations including delay, average speed, trip time and trip time variability. The Tier 1 FEIS determined that none of the Build Alternatives would negatively affect freight train travel times, and therefore no substantial shift of freight traffic from rails to highways would be expected to occur in the future with this program. The Tier 1 FEIS documents the effects of the program alternatives on noise and vibration (Section 4.21), greenhouse gas emissions (Section 4.20), and air quality (Section 4.19). Further studies of the noise, vibration and air quality will be conducted as part of the Tier 2 NEPA process. The net annual operational benefits (greenhouse gas emissions) for the Preferred Alternative would be roughly equivalent to eliminating the emissions associated with the energy and electricity consumption of 2,500 to 4,200 average U.S. single family homes every year. Due to the existing frequent service of both CSXT freight rail traffic and Metro-North commuter rail, the Preferred Alternative would not result in substantial (or even perceptible) increases in noise from train operations.

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment RR-3-18 The DEIS artificially constrains the range of build alternatives by limiting them to four variants of a passenger rail system constructed on or adjacent to CSXT's right-of-way.

Response The Tier 1 DEIS considers in detail a Base (No Action) Alternative and four Build Alternatives (90A, 90B, 110 and 125). As described in Section 3.2 and Appendix C of the Tier1 EIS, the screening of alternatives began with 10 preliminary alternatives. Using a consistent set of performance measures based on the purpose and need, FRA and NYSDOT considered and dismissed 5 preliminary alternatives. The lower speed alternatives (Alternative 79A, 79B, and 79C) are not appreciably different than Alternatives 90A and 90B in operations, costs, and environmental impacts. As a result, FRA and NYSDOT did not advance these alternatives for additional analysis. Very high speed alternatives (Alternatives 160 and 220) were dismissed due to high cost and environmental impacts. Alternatives 125, 160, and 220 would be located outside of the existing alignment. Very high speed alternatives (Alternatives 160 and 220) were dismissed due to high cost and environmental impacts. The very high-speed alternatives (160 and 220) require infrastructure for stations. New alignment on sealed corridor would require electrification of new track and would require a new Positive Train Control signal system. Moreover, high-speed rail on a new corridor would not improve freight capacity for CSXT operations,

when compared to the Base Alternative, since regional Empire Service would continue to operate on the existing Empire Corridor with the same service frequency to provide service to all existing stations. This was one of the performance measures used to evaluate prospective alternatives.

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment RR-3-19 The DEIS's examination of this artificially limited set of options rests on an arbitrary, inconsistent and incomplete methodology that fails to give decision makers an objective basis for fairly evaluating the various alternatives.

Response As described in Section 3.2 and Appendix C of the Tier 1 EIS, the screening of alternatives used a consistent set of performance measures based on the purpose and need. The lower speed alternatives (Alternative 79A, 79B, and 79C) are not appreciably different than the 90 Alternatives in operations, costs, and environmental impacts. As a result, FRA and NYSDOT did not advance these alternatives for additional analysis. Very high speed alternatives (Alternatives 160 and 220) were dismissed due to high cost and environmental impacts.

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment RR-3-20 Most notably, the DEIS fails to consider other options for transporting people across the region. The DEIS does not examine improved air or bus service as reasonable alternatives to high-speed passenger rail. Both of these modes of transportation are cost-effective ways of moving people around the region.

Response As stated in Section 1.3 of the Tier 1 EIS, the program purpose is to improve passenger rail service by increasing speeds, improving reliability, reducing travel times, increasing service frequency, and improving passenger amenities. Projects to improve bus or air travel do not improve rail service and therefore do not meet the Tier I EIS purpose and need. All reasonable alternatives that did meet the purpose have been considered. Bus and air markets were recognized in the travel demand forecasting and are documented in Appendix B and Appendix E of the Tier 1 FEIS.

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment RR-3-21 The DEIS improperly narrows the range of alternatives by artificially narrowing the project's Purpose and Need. Instead of defining the project need as, say, improving transportation options for New Yorkers along the Empire Corridor, the DEIS defines the project need as making passenger rail more desirable. See ES-5. By defining the project's purpose in this narrow and artificial way, the DEIS forecloses consideration of reasonable (and much more sensible) alternatives, such as improving air or bus transportation. Likewise, although New York has publicly stated that the DEIS "will position the state to get future high-speed rail funding from the federal government," qualifying for federal grant money is not a legitimate purpose and need.

Response As discussed in Sections 1.3 and 1.4 of the Tier 1 FEIS, and after a statewide scoping process for this Tier 1 EIS, the purpose of the High Speed Empire Corridor Program is to introduce higher passenger train speeds on the Empire Corridor and improve reliability, travel times, service frequency, and passenger amenities to improve intercity passenger rail travel. Projects to improve intercity bus or air travel do not meet the purpose and need. As presented in Chapters 1 and 2, the need for the program stems from historic growth (over the past 20 years) not only in Empire Service passenger rail traffic, but also freight movements and Metro-North commuter rail. Ridership on the Empire Service increased by more than 50 percent over a period of less than 20 years prior to 2019, and Metro-North commuter rail ridership increased by 45 percent over the previous 25 years. Both the U.S. Department of Transportation and the Association of American Railroads had forecast freight rail growth of at least 50 percent by 2035. Potentially qualifying for federal grant money is not stated in the Tier 1 EIS as a purpose and need for the program.

Commenter	Renjel, Jr., Louis E., Vice President, CSX Transportation
Comment RR-3-22	Even accounting for the time required to travel to and from the airport and clear security, the 90-minute flying time from JFK to Buffalo makes the total trip duration less than half the roughly seven hours under Alternative 110. For the traveler putting time at a premium, the average one-way airfare of \$100, DEIS B-48, compares favorably with the \$58 one-way fare for existing Amtrak service, and even more favorably with the presumably higher fare for faster rail service. The DEIS does not explain why air transport alternatives were eliminated from consideration.
Response	As stated in Section 1.3 of the Tier 1 FEIS, the program purpose is to improve passenger rail service by increasing speeds, improving reliability, reducing travel times, increasing service frequency and improving passenger amenities. Air or bus improvement alternatives do not improve rail service and therefore do not meet the Tier I FEIS purpose and need. All reasonable alternatives that did meet the purpose have been considered. Bus and air markets were recognized in the travel demand forecasting and are documented in Section 2.5.4 and Appendices B and E of the Tier 1 FEIS.
Commenter	Renjel, Jr., Louis E., Vice President, CSX Transportation
Comment RR-3-23	Likewise, bus service is widely regarded as a growing, environmentally-friendly, and cost-effective means of passenger transportation for trips of several hundred miles, with particular appeal to the most cost-sensitive passengers.
Response	As stated in Section 1.3 of the Tier 1 FEIS, the program purpose is to improve passenger rail service by increasing speeds, improving reliability, reducing travel times, increasing service frequency and improving passenger amenities. Air or bus improvement alternatives do not improve rail service and therefore do not meet the Tier I FEIS purpose and need. All reasonable alternatives that met the purpose have been considered. Bus and air markets were recognized in the travel demand forecasting and are documented in Section 2.5.4 and Appendices B and E of the Tier 1 FEIS.
Commenter	Renjel, Jr., Louis E., Vice President, CSX Transportation
Comment RR-3-24	The DEIS does not explain why, if travelers prefer flying or driving because it is faster than the train, they would choose a “high-speed” rail alternative that is still slower than flying or driving. If there are reasonable alternative ways of transporting passengers along the Empire Corridor—as the DEIS concedes there are (see ES-5)—the government is required to consider those alternatives, or explain why they were eliminated from consideration.
Response	As stated in Section 1.3 of the Tier 1 FEIS, the program purpose is to improve passenger rail service by increasing speeds, improving reliability, reducing travel times, increasing service frequency and improving passenger amenities. Alternatives focused on automobile, air, or bus transport do not improve rail service and therefore do not meet the Tier 1 FEIS purpose and need. All reasonable alternatives that met the purpose have been considered. Bus and air markets were recognized in the travel demand forecasting and are documented in Section 2.5.4 and Appendices B and E of the Tier 1 FEIS. In addition, the ridership forecasts done for the Tier 1 FEIS demonstrate that people will ride the train even with the availability of other modes, such as auto, bus, and air. In part this is because train travel often brings a passenger closer to their final destination, often within walking distance, and avoids logistical issues such as parking constraints.
Commenter	Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment RR-3-25	Even if it were permissible under NEPA—and it is not—for the government to restrict the menu of alternatives to several high-speed passenger rail proposals, the DEIS should have analyzed other modes of transportation as part of the “No Build” alternative.
Response	Under NEPA and CEQ regulations (Section 1502.14), only reasonable alternatives need to be rigorously explored and evaluated. FRA/NYSOT is not required to include alternatives that do not meet the program’s purpose and need. The ridership forecast for these other modes are included in the Tier 1 FEIS and can be viewed in Appendix B. As presented in Chapters 1 and 2, the need for the program stems from historic growth (over the past 20 years) not only in Empire Service passenger rail traffic, but also freight movements and Metro-North commuter rail. Ridership on the Empire Service increased by more than 50 percent over a period of less than 20 years prior to 2019, and Metro-North commuter rail ridership increased by 50 percent over the previous 25 years. Both the U.S. Department of Transportation and the Association of American Railroads had forecast freight rail growth of at least 50 percent by 2035.
Commenter	Renjel, Jr., Louis E., Vice President, CSX Transportation
Comment RR-3-26	The formulation of alternatives was arbitrary in another respect: the Empire Corridor South and the Empire Corridor West should have been considered as separate alternatives. By treating the Empire Corridor Program as a single indivisible project, the DEIS masks the weakness of the western portion (Buffalo to Albany) by relying on the relative strength of the southern portion (Albany to New York City).
Response	The High Speed Rail Empire Corridor Program is focused on improvements and goals for the entire corridor from New York City to Niagara Falls. In Chapter 3. - Alternatives, the Base and 4 Build Alternatives outline trip times and ridership for the entire corridor. The program references the two segments of Empire Corridor South and Empire Corridor West for the identification purposes for supporting projects and frequency of service. The organization of the program with the two segments, also allows for the focusing of improvements by the different host railroads along the route. Specific projects with independent utility will undergo the appropriate Tier 2 environmental review.
Commenter	Renjel, Jr., Louis E., Vice President, CSX Transportation
Comment RR-3-27	There is no rational reason why (1) the proposal to create a high-speed passenger railroad on the Western Corridor and (2) the proposal to implement a slate of agreed- upon improvements on the Southern Corridor should be jammed together in a single Environmental Impact Statement. The nature of these proposals is very different and the two corridors themselves are very different—as New York has repeatedly recognized. The Western Corridor project and the Southern Corridor project should have been presented as separate alternatives. This would have given decision makers the option of endorsing the slate of improvements to the Southern Corridor (many of which make sense and are agreed upon by all stakeholders), while electing the “no build” alternative on the Western Corridor—an outcome that plainly constitutes a “reasonable alternative” under NEPA. The decision to lump both corridors together—using the public benefits of the Southern Corridor to justify investments in the Western Corridor—is arbitrary and limits the options of decision makers for no good reason.
Response	The High Speed Rail Empire Corridor Program is focused on improvements and goals for the entire corridor from New York City to Niagara Falls. The program’s purpose and needs pertain to the entire corridor with limits from New York City to Niagara Falls. As discussed in Sections 1.3 and 1.4, the purpose of the High Speed Empire Corridor Program is to introduce higher passenger train speeds on the Empire Corridor and improve reliability, travel times, service frequency, and passenger amenities. The program is being undertaken to meet the following needs: reduce infrastructure constraints and accommodate existing

and projected demand. Specific projects with independent utility will undergo the appropriate Tier 2 environmental review.

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment RR-3-28 First, the DEIS improperly postpones many critical assessments to the Tier 2 stage. An agency may not circumvent NEPA in this way. Courts have held that a tiered approach is permissible only where the government “performs the necessary depth of analysis” at the Tier 1 stage. *United States v. 162.20 Acres of Land*, 733 F.2d 377, 380- 81 (5th Cir. 1984). Because critical decisions that bind the government will be made at the Tier 1 stage, including the choice of a Preferred Alternative, the DEIS must fully address all issues that bear on those decisions and may not defer them to Tier 2. Here, there is no mystery surrounding the location and impacts of the 90 and 110 alternatives; they all require the use of CSXT’s existing right-of-way, where all aspects of the railroad and the adjacent environment are well known. There is no reason why the DEIS cannot address these issues in order to ensure an informed selection of a Preferred Alternative at the Tier 1 stage.

Response The alternatives considered include those that are both on and off of the existing CSXT right-of-way, and the level of information used for this comparison is the same for each alternative. This format is fully compliant with regulations and guidance concerning the use of Tier 1 NEPA documentation for major high-speed rail projects. The Tier 1 DEIS compares each of the program alternatives and their benefits, costs, and potential for environmental impact at a level of detail sufficient to permit reviewers to understand the choices and the scale of impacts likely for each. FRA and NYSDOT used this information, along with public input, to select a preferred alternative in the Tier 1 Final EIS, Alternative 90B. Section 1.1.3 of the Tier 1 FEIS addresses use, and compensation for use, of CSXT right-of-way: “The position taken by CSXT and agreed to by NYSDOT in the Agreements must be considered in the implementation of the Preferred Alternative chosen by NYSDOT and FRA on property owned by CSXT. One principle set forth in the Agreements is that CSXT is entitled to compensation for the use, acquisition, or diminishment in value of its property resulting from any project advanced as a result of the Tier 1 EIS. While the development of the cost of alternatives must and will include the recognition of this principle, the negotiation of the actual value of any compensation to CSXT is not part of this Tier 1 EIS, and will be developed if and when necessary as part of Tier 2 program advancement.” The Tier 1 DEIS did not artificially constrain the range of Build Alternatives. Alternative 125, which would not follow the CSXT right-of-way, was dismissed due to high cost and environmental impacts. Moreover, high-speed rail on a new corridor would not improve freight capacity for CSXT operations, when compared to the Base Alternative, since regional Empire Service would continue to operate on the existing Empire Corridor with the same service frequency to provide service to all existing stations. This was one of the performance measures used to evaluate prospective alternatives. Chapter 4 of the Tier 1 Final EIS and Appendix G presents the environmental analysis that supported selection of the Preferred Alternative. The Tier 1 DEIS and Tier 1 Final EIS considered the range of impacts in selecting Alternative 90B as the Preferred Alternative. Alternative 90B was selected based on lesser costs and impacts than both Alternative 110 and 125, while also meeting the performance metrics used to screen the alternatives (including improving freight travel times and passenger rail ridership and OTP). Due to the scale and scope of the program, Tier 1 examined the 464-mile long existing Empire Corridor/Niagara Branch Study Area for the 90 mph/110 mph alternatives at a conceptual level, identifying potential impacts to screen to a Preferred Alternative. It also evaluated the 450-mile long 125 mph Study Area. Although the conceptual environmental study identified “buffers” that could potentially be impacted at Tier 1, it would not be possible to examine in detail impacts of the entire range of alternatives evaluated in the Tier 1 program. More advanced design and environmental analysis would be required (appropriate for Tier 2) to fully characterize the extent, nature, and duration of impacts for this program, which spans the entire state. The concepts examined in the Tier 1 FEIS were

appropriate for this level of analysis, but Tier 2 analysis is necessary to fully comprehend the impacts of the Preferred Alternative.

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment RR-3-29 Second, the analysis of environmental impacts consists of generalized descriptive summaries instead of quantitative assessments. This is unhelpful to the decision maker because it does not allow apples-to-apples comparisons of the alternatives using a common metric. The DEIS also asserts that certain alternatives “support” or “strongly support” various performance objectives. See Chapter 6. But the DEIS does not disclose how it makes these gradations—that is, the point at which an alternative crosses the line from “support” to “strongly support.” Likewise, the DEIS compares alternatives with regard to whether they will have low, moderate or high adverse impacts in particular areas. See Exhibit 6-10. But the DEIS does not explain the thresholds for these determinations—and in some cases, more than one alternative is deemed to have the “highest” impact. Like much in the DEIS, these rankings appear to be arbitrary and subjective.

Response The Tier 1 FEIS clarified how environmental rankings were determined, the qualitative discussion in Section 6.4 provides the basis and substantiation for the rankings of environmental impacts presented in this chapter. The Tier 1 document quantified the potential impacts to resources to the appropriate level for this program assessment, as documented in Chapter 4 of the Tier 1 FEIS. This discussion included, as appropriate, quantitative comparisons on which to compare alternatives (e.g., number of waterway crossings for each alternative), but did not subjective numeric rankings. For instance, the acres within the study area for land uses, wetlands, floodplains, and farmlands are presented for each alternative. This is the appropriate level of assessment at Tier 1, until the proposed action is selected and the design concept fully developed. The relative rankings of low, medium, and high for environmental impact were based on these potential impacts as presented in Chapter 4, in each respective section. In general, alternatives that involved minimal right-of-way takings were deemed to involve low impact and those requiring entirely new right-of-way or additional right-of-way takings were deemed to involve medium to high impacts (depending on the relative extent of takings required). Similarly, the performance objectives present both quantitative and qualitative measures (e.g., OTP, travel time, frequency of service, ridership, etc.). The use of four gradations of ratings, from 'contrary to program goals,' to 'strongly supports program goals,' is intended to summarize the effectiveness of program alternatives in meeting the program performance objectives which are numeric values. In all cases where the 'strongly supports' gradation is used versus the 'supports' designation is used, the accompanying numeric values are clearly of a different magnitude. Exhibit 6-10 is a summary rating of the more-detailed environmental impacts information.

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment RR-3-30 Nor does the DEIS apply performance objectives consistently. For example, the DEIS identifies “minimize interference with freight rail operations” as a performance objective. See Appendix C. But the DEIS then rejects the 79 miles-per-hour alternatives because “their principal attribute . . . Is to provide greater reliability and fewer conflicts with existing and future CSXT freight movements along the Empire Corridor West.” See DEIS 3-8. That fact should have cut in favor of these alternatives, not against them.

Response As stated in Section 3.2.1 of the Tier 1 FEIS, the Alternatives 79A, 79B, and 79C were dismissed because they would be similar and slightly inferior to the Alternatives 90A and 90B. These alternatives were not advanced because, “None of the 79 mph alternatives provides a significant operational or cost advantage over the 90 mph alternatives. Because there was no substantive and positive differentiator of the 79 mph alternatives, they were not advanced for further consideration. In each case, the comparable 90 mph alternative

showed slightly superior trip time and ridership, resulting in it being retained over its slightly inferior 79 mph counterpart.”

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment RR-3-31 Third, the DEIS compares alternatives by comparing cost estimates that the DEIS recognizes are not actually comparable. The DEIS recognizes that as the owner of the Western Corridor right-of-way, CSXT “is entitled to compensation for the use, acquisition, or diminishment in value of its property resulting from any project advanced as a result of the EIS.” DEIS 5-3 through 5-4. But the DEIS refuses to estimate that cost, which would indisputably increase the current “estimates” for Alternatives 90A, 90B, and 110 by billions of dollars given the value of the land and the enterprise value of CSXT’s current and future operations on that land. Omitting these costs makes it impossible to reasonably compare those options with Alternative 125, for which the DEIS does include land acquisition costs. The DEIS explains that the “development of the cost of alternatives must and will include the recognition of [the] principle” of compensation owed to CSXT. Id. At 5-4. But it attempts to mask the true costs of Alternatives 90A, 90B and 110 until Tier 2—after a Preferred Alternative has been chosen. In fact, the DEIS repeatedly presents the costs as if they are complete. See, e.g., id. At 3-42 Exhibit 3-17; 5-28 Exhibit 5-12. Worse, it repeatedly shows the costs side-by-side, without so much as a footnote alerting the public that the estimates are far from equivalent. See id. At ES-15 Exhibit ES-4; 5-15 Exhibit 5-1; 5-16 Exhibit 5-2; 5-22 Exhibit 5-7; 5-29 Exhibit 5-13.

Response NYSDOT has not obfuscated comparative costs. But, as noted in Section 5.2.1 in the “Property Acquisition” subsection, the Tier 1 FEIS recognizes the principle that while “CSXT is entitled to compensation for the use, acquisition, or diminishment in value of its property... the negotiation of the actual value of any compensation to CSXT is not part of this Tier 1 EIS.” That notwithstanding, the capital costs of the Tier 1 EIS are consistent throughout the alternatives including where property off of the existing right-of-way is required for construction, the costs were included in the capital costs. Similarly, the operations and maintenance costs, where an agreement with the host railroad would typically be captured, are consistent with the appropriate Passenger Rail Investment and Improvement Act (PRIIA) guidelines.

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment RR-3-32 Fourth, the operations modeling is flawed and undermines the DEIS’s rating system. As explained in detail in the attached Declaration of Mark A. Dingler: “By departing from standard practices for the integrity of simulations, by using inputs and parameters known to be inaccurate, and by failing to account for the real-world conditions under which a railroad operates, the document’s conclusions about both passenger and freight service are unreliable. Moreover, because of the lack of adequate documentation, it is impossible to know precisely what assumptions were and were not made.” Dingler Decl. ¶ 39. A scheme that makes sense on paper can fail spectacularly in the real world. In a plan with virtually no margin for error, a single small delay will cause a severe domino effect of delays and misplaced infrastructure and equipment across the entire system. This is particularly the case when the passenger tracks are laid out with the assumption that trains travelling in opposite directions utilize carefully-placed stretches of additional track. That technique of “flying meets” falls apart if either train is delayed. See D-54, D-58. And because the DEIS contemplates the freight and passenger lines crossing one another, any delay will affect both services.

Response The rail network simulations are discussed with supporting results in Appendix D (Volume 3) of the Tier 1 FEIS. Current and future movements of CSXT freight trains were included. Section 2 of the simulation modeling discusses the methodology for operating simulations. The results of the different scenarios are reported in Section 3 of the simulation modeling study. As shown in Exhibit 6-8, the Preferred Alternative, Alternative 90B, would result in

the least delay-minutes per 100 train miles operated for freight trains. The simulation modeling study is appropriate for a Tier I FEIS. In the development of the models of the Empire Corridor, FRA and NYSDOT provided CSX Transportation the opportunity to participate (as noted in Section 2.1 of Appendix D to the Tier 1 FEIS), CSXT provided comments on features and additional trackage that should be included in the model.

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment RR-3-33 Appendix A to this Comment examines ten other environmental impact statements prepared for similar high-speed passenger rail projects and demonstrates that the Empire Corridor DEIS is an outlier. In virtually every respect, the Empire Corridor DEIS is the only environmental impact statement in the group to provide such a superficial analysis of key issues. (FROM APPENDIX A)

1. Southeast High Speed Rail Tier 1 Final EIS, July 2002
2. Richmond to Hampton Roads Passenger Rail Project Tier 1 Final EIS, August 2012
3. Florida High Speed Rail: Tampa to Orlando Final EIS, May 2005
4. DesertXpress High-Speed Passenger Train Final EIS, March 2011
5. California High-Speed Train System Final Program Environmental ImpactReport/EIS, August 2005
6. Chicago to St. Louis High-Speed Rail Program Tier 1 Final EIS, October 2012
7. Chicago to Council Bluffs-Omaha Regional Passenger Rail System Planning Study Tier 1 Final EIS, May 2013
8. Milwaukee-Twin Cities High-Speed Rail Corridor Program Draft Final Alternatives Selection Report, October 2011
9. California High Speed Train Project Revised DEIR/Supplemental DEIS Fresno to Bakersfield, 2012 California High Speed Rail Train System Final Program EIR/EIS Merced to Fresno Section

Response In preparing this Tier 1 EIS, the referenced Tier 1 documents contained in the comment were reviewed. The Empire Corridor Tier EIS uses methods that are similar, if not identical, to many of the EIS documents referenced by the commenter. For example, the methods of screening alternatives, and establishing performance measures that address the program purpose and need, setting environmental buffers, and conducting environmental analyses in the Empire Corridor document closely matches other Tier 1 EIS's, such as the Chicago to Council Bluffs-Omaha Tier 1 FEIS and the Chicago to St. Louis High-Speed Rail Tier 1 FEIS. The Empire Corridor team engaged an Empire Project Advisory Committee (EPAC), similar to the Richmond/Hampton Road Tier 1 EIS technical working group, to vet alternatives, benefits, costs, and potential impacts. CSXT was an active participant on the Advisory Committee by formal invitation, and its concerns were considered in framing analysis methodologies, system simulation, and means of evaluating competing alternatives. CSXT was involved in the rail simulations, as documented in Appendix D. The Tier 1 Final EIS has incorporated additional discussion of the findings of the rail simulations in Chapter 3, "Alternatives."

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment RR-3-34 Slowing and displacing freight traffic leads to increasingly congested highways and more pollution. That is because increased delays and uncertainty will cause businesses to ship their goods by truck rather than by rail.

Response The additional capacity of increased mainline track in Alternatives 90B and 110 along with professional dispatching will result in positive benefits to freight traffic by decreasing delays and uncertainty. Service is demonstrated to improve for both passenger and freight train operations as passenger interference is minimized. Chapter 3.3 of the Tier 1 FEIS documents the rail simulation results for each alternative in the "Freight Operations" discussions. Appendix D of the Tier 1 Final EIS presents additional details of the rail simulations.

Commenter	Renjel, Jr., Louis E., Vice President, CSX Transportation
Comment RR-3-35	For these reasons, the Empire Corridor project will harm the environment by slowing freight rail operations and putting more trucks on the nation's highways. HDR Engineering, Inc. analyzed the public cost of CSXT freight traffic that would be displaced to highways if proposed high-speed intercity passenger rail were implemented on the CSXT mainline between Buffalo and Albany. That analysis, attached as Appendix E, concludes that the project would impose \$9.8 billion in public costs (using a 3 percent discount rate). These costs would include increased costs to shippers to purchase equivalent truck transportation instead of rail transportation. They would also include increased pavement maintenance costs, increased highway congestion costs, increased air emissions costs, and increased accident costs—all due to the diversion of freight from rail to truck.
Response	<p>The simulation of rail operations and the analysis of the potential impact of the program on freight operations demonstrate that the Preferred Alternative will have a positive effect on freight movements (see Exhibit 6-8). Therefore, the analysis completed for the Tier 1 FEIS shows that it is incorrect to state that the program will "...harm the environment by slowing freight rail operations and putting more trucks on the nation's highways." The Rail Network Operations Simulation (Appendix D) used information provided by CSXT for both current and future train movements. The Tier 1 FEIS used a freight traffic growth rate through 2035 provided by CSXT. Because the Preferred Alternative is forecasted to reduce both freight travel and decrease freight travel times, freight diversions (from train to truck) are not anticipated.</p> <p>In 2011, the Baseline Simulation Report was advanced following receipt of review comments received from CSXT to reflect changes in train volumes and routing. The Amtrak Baseline Simulation OTP was recomputed based on CSXT model changes, giving Amtrak higher dispatching priority. Amtrak On-Time Performance was returned to CSXT for review. CSXT provided e-mail approval of the revised Baseline Simulation Model. This coordination with CSXT and their inputs is documented in Appendix D, "Rail Network Operations Simulation," Section 2.1.</p>
Commenter	Renjel, Jr., Louis E., Vice President, CSX Transportation
Comment RR-3-36	The DEIS contains none of this analysis. See DEIS App. D. Its treatment of the harmful impact on freight traffic—and the resulting damage to the environment—falls far short of what NEPA requires. The possibility of freight traffic being diverted to the highways is "reasonably foreseeable," and would plainly have a significant impact on road conditions, energy use and air quality. Thus, NEPA requires that it be discussed in the DEIS.
Response	The Tier 1 EIS documents impacts to freight traffic, and the Preferred Alternative will not cause degradation of rail service even with the CSXT-provided growth in freight traffic through 2035, but will reduce freight delays and travel times, as documented in Section 6.3.2 and Exhibit 6-8 of the Tier 1 Final EIS and Appendix D. Therefore, it is reasonably anticipated that the program will not cause diversion of freight from rail to trucks. Consequently, adverse effects on air quality, energy usage, road traffic conditions, etc. due to freight diversion from train to truck are not expected.
Commenter	Renjel, Jr., Louis E., Vice President, CSX Transportation
Comment RR-3-37	The DEIS's analysis of the impact on freight is far less detailed than the analysis conducted for other passenger-rail projects.
Response	The Tier 1 EIS documents the impacts to freight traffic from the Build Alternatives, and does not cause any degradation of freight rail service. Each passenger-rail program is unique, and the level of detail provided is sufficient for a Tier 1 EIS. The Preferred Alternative will provide the greatest reduction in freight delays of all of the Build Alternatives considered

and will also reduce freight travel times. With Alternative 90B, freight train delay-minutes would decrease the most among all alternatives, improving 10 percent over the Base Alternative and 6 percent over Alternative 110, the second best Build Alternative.

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment
RR-3-38 The DEIS makes no attempt to model the enormous impact of twenty years of intensive construction on the freight corridor that would be necessary to implement the 90 or 110 alternatives. The effects of such a massive construction project are simply ignored—even though such an analysis is required by the FRA’s NEPA regulations. See 64 Fed. Reg. 28550. Large-scale construction on passenger tracks and associated infrastructure like signals would occur just a few feet away from the existing freight lines, requiring trains to slow as they pass through work zones. See generally 49 C.F.R. pt. 214. In fact, for Alternatives 90B and 110, the DEIS proposes shifting existing freight tracks, necessitating that traffic stops completely. See DEIS 3-39, 3-47 (discussing “large[] track shifts”). Yet it does not even acknowledge that disruption.

Response Section 4.25 of the Tier 1 EIS discusses construction means and methods and potential impacts and mitigation measures that would be employed under each of the alternatives. More design and construction details will be known as the program progresses and will be analyzed in the Tier 2 analysis.
The commenter inaccurately implies that page 3-39 and page 3-47 discuss the shifting of tracks during construction. Permanent, post construction track shifts would be constructed in segments to allow for the increase in operating speeds. Pages 3-39 and 3-47 of the Tier 1 DEIS discuss Alternative 90B and Alternative 110 alignments where several areas between Schenectady and Syracuse would require larger track shifts to obtain an increase in operating speeds due to the existing geometry of the track.

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment
RR-3-39 With regard to Alternative 90A, which would run more passenger service on the existing freight lines, the DEIS fails to account for the fact that federal law would require almost all the tracks on the Western Corridor to be upgraded to support the proposed speed. As the DEIS correctly notes, most of the existing mainline track is currently maintained to FRA Class 4 standards, which limits freight traffic to 60 m.p.h. and passenger traffic to 80 m.p.h. See 2-20, -21; 49 C.F.R. § 213.9(a). Yet Alternative 90A contemplates service going as fast as 90 m.p.h. The DEIS does not acknowledge the disruption involved in upgrading the entire line to Class 5, much less the high cost of doing so. Nor does it address the direct cost of maintaining the track to that higher standard, which has significantly lower tolerances for deviations in track geometry, or the impact on operations on a congested corridor to accommodate that work. See generally American Railway Engineering and Maintenance Of Way Association, Practical Guide to Railway Engineering 3-47 through 3-54 (2003).

Response The Tier 1 EIS discussion of Alternative 90A recognizes the need to upgrade the existing tracks from Class 4 Standards to Class 5 Standards; Tier 1 FEIS Section 5.5 presents the understanding that improvements to existing infrastructure as part of Alternative 90A will be required. Section 5.5.1 acknowledges the potential adverse impacts to existing operations of constructing Alternatives 90A, 90B, and 110. Section 5.3.3 discusses CSXT involvement in the program development and also illustrates the FRA commitment to implementing the program so as to avoid adverse effects to CSXT freight operations. Specific and more detailed construction impacts and mitigation will be further defined in the Tier 2 analysis.

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment
RR-3-40 The DEIS’s cost-benefit analysis is faulty; it substantially underestimates the project’s costs and substantially overestimates its benefits. HDR Engineering conducted a cost/benefit

analysis of the Empire Corridor project. That analysis is attached as Appendix D. HDR concluded that even under the “most favorable scenario,” the costs of the project exceed the benefits by approximately \$2.3 billion (using a 7 percent discount rate). The results for less favorable scenarios are worse.

Response The Cost-Benefit Analysis used for the High Speed Rail Empire Corridor is discussed in Section 5.2 and Appendix F (Capital, Operating and Maintenance Cost Estimating Methodology), and it is consistent with Amtrak’s accounting for, and determination of the operating and maintenance cost. In the future, and as appropriate, the Cost-Benefit Analysis for each of the individual supporting projects as part of the Tier 2 process will be consistent with the Federal Railroad Administration’s guidelines for Benefit-Cost Analysis Guidance for Rail Projects.

We have reviewed the HDR analysis, and these are our findings. Costs (capital and operating/maintenance) are presented in Exhibit 6-9 in the Tier 1 Final EIS, and means of funding the capital costs are addressed in Section 5.3. Subsidies noted are for operating cost vs. annual revenue as noted in the exhibit.

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment RR-3-41 First, in a section entitled “Market Qualities of Successful High-Speed Rail,” the DEIS identifies several factors necessary for a successful high-speed passenger rail system—but neglects to acknowledge that the Empire Corridor project fails to meet its own conditions for success. For example, the DEIS states that a “condition for successful [high-speed passenger rail service] is having the appropriate distance between stops,” and explains that “stops 250 miles apart” are ideal. DEIS B-7. But the DEIS then proposes a system in which the stations are only 31 miles apart on average, and only 35 miles apart on the Western Corridor portion. Likewise, the DEIS states that it is a “condition for successful” service that the cities served by a high-speed rail line have “existing transit systems,” and deems it “critical” that there be population density around a station. DEIS B-8, B-9, B-27. But the DEIS then concedes that the “populations that make up each major market on the [Western] corridor” are “heavily dispersed.” Id. At B-97. Even using the DEIS’s own density benchmark of 4,000 people per square mile, only Rochester and Buffalo have the requisite density to support high-speed passenger rail.

The DEIS repeatedly acknowledges that almost all of the proposed station stops on the Western Corridor lack the requisite population density, the requisite transit connections, or both

Response The Empire Corridor across New York State is one of the oldest continually operated passenger trains routes in the United States. The purpose of the High Speed Rail Empire Corridor Program is to reduce trip times and increase the service. The Tier 1 EIS in describing the conditions for successful high speed rail service, builds from the concepts of offering services at different levels to support the communities along the route. Stations along the Empire Corridor are part of the historical development of passenger service. On the route, there are already significant distances between stations with a span of 61 miles between Buffalo-Depew and Rochester and 80 miles between Syracuse and Rochester, these distances are consistent with some of the stations along the Northeast Corridor, which also features high-speed train service. It also needs to be recognized that along the Empire Corridor that the stations are regional resources, with many of the passengers driving to these stations to use the intercity rail service. Station spacing along the Empire Corridor are consistent with the availability for passengers to other modes of transportation.

Ridership and Revenue projections and estimates are discussed in both Volume 1 and Appendix B, and include the criteria that will help the different alternatives achieve the program goals. There are several criteria that would make a high speed corridor program viable including serving cities with existing transit systems. The Empire Corridor program

serves the most populous and densely populated cities in the state including New York, Albany, Syracuse, Rochester, and Buffalo.

Both the FRA and NYSDOT believe that there are no discrepancies in the methodology and findings of the ridership and revenue forecasting that is used in Volume 1 and Appendix B. All of the cities along the Empire Corridor are served by transit systems, and many include feeder route that extend beyond the city to their suburban communities.

Exhibit 3-1 presents the FRA levels of high-speed rail service, and the Emerging category (speeds up to 90 mph) has routes between 100 to 500 miles while the next level up, Regional (90 mph-125 mph), has routes up to 500 miles apart. The 250-mile separation would be more appropriate for very high-speed rail in a less densely populated area. The existing Empire Corridor service has existing station stops that serve the largest cities in the states along the route, and the service to these cities would contribute to the ridership potential for the service, making the service more viable. The remainder of this section in Appendix B cites conditions for successful high-speed rail service: (1) locating service in metropolitan areas with transit systems and (2) locating service in metropolitan areas with strong Gross Domestic Product. The existing Empire Service servicing city centers in New York City, Buffalo, Rochester, Utica, Syracuse meets these conditions for successful high-speed rail service, but this requires station stops less than 250 miles apart. The Northeast Corridor (current Acela schedules) make stops more frequently than 250 miles and Acela is considered a successful high-speed service. Population centers in the northeast are routinely much closer than 250 miles with service to reflect the population centers.

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment RR-3-42 The DEIS recognizes that high-speed passenger rail works best in “regions with high congestion levels,” such as in the Northeast Corridor where I-95 is often backed up, making travel by automobile or bus difficult and unpredictable. But the DEIS then concedes that the Western Corridor is not plagued by congestion, acknowledging that the “presence of an uncongested Thruway . . . provides quick auto trips between [cities] on this sub-corridor and quickly connects auto users from the origin to their destination.” B-97

Response As discussed in ES-2.2 and Chapter 1 of the Tier 1 EIS, the purpose of the High Speed Rail Empire Corridor Program is to introduce higher passenger train speeds on the Empire Corridor and to improve reliability, travel times, service frequency and passenger amenities. Relieving congestion levels in the corridor would be a benefit of the program but is not the purpose or identified as one of the needs for the program. The Empire Corridor program would provide benefits throughout the corridor including providing better reliability, travel times, service frequency and passenger amenities. The corridor has been identified in three segments because each have of the unique operating characteristics of each. However, the program is anticipated to provide benefits for travelers between on the entire corridor from New York City to Niagara Falls.

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment RR-3-43 The DEIS also fails to acknowledge that regional planning studies do not endorse the idea of high-speed rail along the Empire Corridor. While there are many community planning studies addressing how to restore and grow the region’s economy, none identifies high-speed passenger rail as the solution. To the contrary, these studies conclude that tax dollars should be spent on attracting businesses, renovating declining neighborhoods and investing in schools (to name just a few examples). No planning study recommends prioritizing high-speed passenger rail above these and many other compelling public needs. In fact, although the DEIS notes that there have been many federal, state and local planning groups that have studied the feasibility of high-speed passenger rail—and how it might fit into overall regional planning efforts—the DEIS does not integrate or even meaningfully engage these studies and their conclusions.

Response	<p>Section 4.2 and Appendix G, Section 1 of the Tier 1 FEIS cites more than 20 state, regional, and local plans, many of which indicate support for improved access to rail service including improvements to the rail corridor, strengthened alternative modes of transportation, improved on-time performance, introduction of high- and higher-speed rail, and revitalization of station areas. The plans cited for program consistency include: New York State Rail Plan, NYSDOT Multimodal Transportation Program submission: 2009-2014 (March 20) as well as 26 county and municipal plans. The program is also consistent with the New York State Smart Growth Public Infrastructure Policy Act, as addressed in Section 4.2 and Appendix G.1. The U.S. Conference of Mayor's report addressed the substantial economic benefits that would accrue with implementation of high-speed rail service to the Albany region. This report projects that incremental speed improvements (79 to 90 mph) and more frequent service (32 roundtrips from NYC to Albany) could result in an addition of approximately 3,184 jobs in 2035 in the Capital District/Albany region alone. This report also forecasts increases in 2035 of sales output in the Capital District alone of \$357.9 million per year and increases in 2035 wages of \$158.7 million per year.</p> <p>The Build Alternatives advanced for analysis in the Tier 1 DEIS meet the program's primary needs: to reduce infrastructure constraints and accommodate existing and projected (ridership) demand.</p> <p>Contributing to "economic revitalization by accommodating forecasted growth in population and employment and corridor rail freight operations" is one of the program's transportation-related goals and supports the program's purpose and need of accommodating existing and future demand. Growing the region's economy in general and in a non-transportation manner is not a program objective and is beyond the scope of this program and review.</p>
Commenter	Renjel, Jr., Louis E., Vice President, CSX Transportation
Comment RR-3-44	Nor does the DEIS acknowledge that the 90 Alternatives do not even qualify as "high speed" rail as Congress defines it.
Response	The Federal Railroad Administration's High Speed Intercity Passenger (HSIPR) Program outlines a 3-Tiered Strategy for Passenger Rail, that would include the 4 Build Alternatives (90A, 90B, 110 and 125). https://www.fra.dot.gov/Page/P0134
Commenter	Renjel, Jr., Louis E., Vice President, CSX Transportation
Comment RR-3-45	Another disturbing omission is the DEIS's failure to reconcile its ridership projections with the dramatically different projections in the 2006 study by the state Senate Task Force. The Senate study projected that traffic between the New York City area and points on the Western Corridor would constitute only 5 percent of all new ridership for a high-speed passenger rail line similar to Alternative 110. The DEIS, however, concludes that traffic between the New York City area and points on the Western Corridor will constitute 65 percent of the new ridership for Alternative 110. See DEIS App. B. The DEIS offers no explanation for this disparity. At a minimum, New York must explain why it chose to ignore the Senate Report and why it reached such a dramatically different conclusion.
Response	<p>The Tier 1 EIS for the High Speed Rail Empire Corridor Program actually projects lower ridership for the three of the four Build Alternatives, representing a more conservative estimate. The projected ridership in 2035 is: 2.3 million for Alternative 90A, 2.6 million for the Alternative 90B; 2.8 million for the 110 Alternative; and 4.3 million riders for Alternative 125.</p> <p>Section 3 of The New York State Senate High Speed Rail Task Force Report (2006), discuss ridership growth with the various alternatives with projected ridership growth to 2025, it is discussed in greater detail in Section 3.1.6 (page 3-9) of that document with a possible ridership of 3,946,000 in 2025 for Alternative E.</p> <p>Since 2001, ridership on the Buffalo to Albany-Rensselaer portion of Empire Corridor has more than doubled. Although comprising a substantially smaller proportion of overall</p>

ridership on Empire Corridor, Empire Corridor West has the highest growth rate (as a percentage) on the corridor. It experienced a proportionally larger growth rate than the New York City to Albany segment. The New York State Senate Task Force Report echoes this conclusion with ridership increases projected along Empire Corridor West. The report states: “The most dramatic ridership increases in percentage terms occur in the west corridor, where current ridership today is low relative to the south corridor.” The report states that Empire Corridor West was found to represent 16 percent of the total ridership and 56 percent of the total projected growth (for Case D-New Operations Plan), with an increase of ridership growth along Empire Corridor West of 316%. Appendix B of the Tier 1 EIS states: “Long Trips on the Empire Corridor – or trips that connect pairs such as NYC to Buffalo, NYC to Rochester, and NYC to Syracuse – account for about 60 percent of all growth forecast in all of the build alternative speeds studied.” This is roughly consistent with the 56 percent growth projected for Case D of the NYS Senate HSR Task Force report.

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment RR-3-46 Second, the DEIS overestimates benefits by basing projected ridership numbers on an inflated estimate of the region’s population in the years ahead. Although the DEIS states that a goal of the project is to “[c]ontribute to economic revitalization by accommodating forecasted growth in population,” ES-6, the DEIS acknowledges that its own estimates show “a slight population decrease in many of the counties” on the Western Corridor by 2035. See DEIS 2-10, 2-11 (emphasis added).

Response The projected population and employment for the Empire Corridor’s nine MPO regions are based upon the U.S. Census 2010 data. The Ridership and Revenue Forecasting Study indicates that an improved rail service, in terms of improved travel time, frequency of service, and reliability, will offer more travel choices (a program goal) with a target to attract passengers from their automobile, contributing to improved air quality and other environmental benefits. Appendix B of the Tier 1 FEIS explains that most of the new ridership along the Empire Corridor will be based on traveling to New York City, due in part to the ease of train travel to NYC vs. other modes. Train travel often brings a passenger closer to their final destination, often within walking distance, and avoids logistical issues such as parking constraints, which are particularly challenging in NYC. It is also anticipated that improved service on the western portion of the Empire Corridor will create new travel opportunities, supporting a program goal to increase travel choices.

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment RR-3-47 Moreover, the DEIS’s population estimates are unreliable. They are overoptimistic and deviate substantially from the population estimates prepared by the state-funded (and Census Bureau-affiliated) Cornell Program on Applied Demographics. For example, the Cornell Program estimates that by 2035 the Western Corridor will lose more than three times the population that the DEIS projects. Similarly, when the Western Corridor and Southern Corridors are taken together, the DEIS projects approximately six times the population growth that Cornell projects.

Response The reference cited by the commenter does not forecast population estimates; it uses only historic data and continues the rate of change in population for the future. Section 4.3 of the Tier 1 EIS discusses the methodology used to identify future population in the nine MPO areas, eight Metropolitan Statistical Areas and population statistics for 25 counties in the Empire Corridor obtained from the 2010 U.S. Census Decennial Census.

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment RR-3-48 The DEIS does not identify how much it will cost to purchase or lease the land, and does not explain how New York expects to pay for it, even though the Framework Agreement expressly recognized New York’s obligation to pay CSXT the cost of land acquisition or use. Third, the DEIS massively underestimates the project’s costs. Although the DEIS specifically

notes the immense cost of land acquisition for the 125 option, it largely sidesteps this issue with regard to the other build options (Alternatives 90A, 90B and 110). CSXT owns hundreds of miles of the right-of-way on which the proposed passenger service will operate. That property is a key segment of CSXT's line from Chicago to the New York-area ports, a right-of-way stretching across six states with a value in the billions.

Response The Tier 1 DEIS addresses broad corridor-level issues. Subsequent phases, or tiers, will analyze in greater detail site-specific proposals based on the decisions made in Tier 1. As stated on Pages 5-3 and 5-4, the Tier 1 DEIS recognizes the principle that "CSXT is entitled to compensation for the use, acquisition, or diminishment in value of its property..." The cost of compensation for use of CSXT right-of-way cannot be determined at this time and will be subject to future negotiations.

Program costs are presented in Chapters 3 and 6 for all of the Build Alternatives. The Tier 1 Final EIS cost estimates did not include the cost for compensating CSXT for the use of the right-of-way. However, the 90 and 110 Alternatives accounted for significant property acquisition within the cost estimates. In estimating the cost of land acquisition, five distinct categories of land acquisition types were developed – prime city, town, suburban, farmland, and marsh. Each land category was assigned a unique per acre dollar value. With regards to building acquisitions, three distinct categories were developed – business, residence, and outbuilding. The values were assigned using square foot (SF) of building size.

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment RR-3-49 "Presenting accurate market demand information [is] necessary to ensure a well informed and reasoned decision, both of which are procedural requirements under NEPA." By relying on population and employment numbers that are not accurate—and by neglecting to acknowledge that the Empire Corridor project does not meet its own requirements for a successful high-speed rail program—the DEIS's assessment of market demand is deficient.

Response The population and employment statistics presented in the Tier 1 EIS were obtained from the U.S. Census Bureau and the U.S. Bureau of Economic Analysis. According to the 2019 U.S. Census, New York's six largest metropolitan areas (New York City, Buffalo, Rochester, Yonkers, Syracuse, Albany) lie along this corridor. New York City is the nation's largest economic center, and is one of the three largest economic centers in the world, along with London and Tokyo.

Appendix B presents the results of the "Ridership and Revenue Forecasting," that formed the basis for estimating market demand for the Empire Corridor Program. Within this report, Appendix A presents a review of the modeling methodology. This effort included a comprehensive literature review, including review of other statewide transportation models, to devise an intercity multimodal travel demand forecasting model. Modeling also considered methods used for the California statewide High-Speed Rail forecasting, as well as that used for the Northeast Corridor Model.

The program's model included examining market pairs for cities, including nearby cities outside the state, such as Boston and Washington. The modeling effort included examination of other modes (highway, air travel, bus), in addition to intercity passenger rail. The forecasted populations and employment were the basis for the growth factored into forecasted travel demand. The model included an origin-destination analysis that also used a statewide average daily demand matrix and corridor annual vehicle traffic (based on toll data for the New York State Thruway). The Empire Corridor Intercity Travel Demand Model was successfully calibrated to match the observed travel data.

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment RR-3-50 The FRA has deemed the compensation question sufficiently critical that it will not provide federal funding for high-speed rail projects on a freight railroad's right-of-way until this question has been resolved.

Response	Applicable federal laws require that, as a condition of receiving a grant for projects that use a railroad owner's right of way, the grant recipient shall have in place an agreement addressing its shared use by the parties. As program elements of the Empire Corridor Program advances to the grant agreement stage, the Department will fully comply with this provision of the Federal Register/Vol. 74, No. 119 Appendix 3.4.3.
Commenter	Renjel, Jr., Louis E., Vice President, CSX Transportation
Comment RR-3-51	A decisionmaker cannot compare the true costs of the build options absent an analysis of the cost of land acquisition or other compensation that must be paid to the property owner for the use of its land. The selection of a Preferred Alternative in the absence of such critical information would be arbitrary and capricious.
Response	Program costs are presented in Chapters 3 and 6 for all of the Build Alternatives. The Tier 1 Final EIS cost estimates did not include the cost for compensating CSXT for the use of the right-of-way. The cost of compensating use of CSXT right-of-way will need to account for factors that include current operations and OTP performance/operational delays. However, property acquisition costs have been accounted for in the cost estimates of the Build Alternatives. In estimating the cost of land acquisition, five distinct categories of land acquisition types were developed – prime city, town, suburban, farmland, and marsh. Each land category was assigned a unique per acre dollar value. With regards to building acquisitions, three distinct categories were developed – business, residence, and outbuilding. The values were assigned using square foot (SF) of building size.
Commenter	Renjel, Jr., Louis E., Vice President, CSX Transportation
Comment RR-3-52	The DEIS ignores many other costs, including the cost of compensating the owners of industrial parcels on the far side of the passenger tracks, and on the northward- connecting branches and regional lines, for the diminishment in their property value caused by the loss of rail access. And for Alternatives 90A, 90B and 110, the DEIS fails to adequately account for operational costs, including the significant costs of upgrading the circuitry that controls warning systems at sidings and grade crossings.
Response	All customer access is maintained in the current conceptual track layouts, so no loss was estimated for diminishment of property value. The operational costs are included in the cost estimates. It is noted in Sections 3.3.3 and 3.3.4 that a new signal system and grade crossing modifications are major elements in the additional infrastructure required for Alternatives 90B and 110, respectively. Costs for the signal system, warning systems, public and private grade crossings, and PTC upgrades are included.
Commenter	Renjel, Jr., Louis E., Vice President, CSX Transportation
Comment RR-3-53	The DEIS fails to take a hard look at noise and vibration impacts. In fact, the DEIS fails to follow the steps set forth in the FRA's noise manual, despite claiming to follow that methodology. DEIS 4-238. Curiously, the DEIS relies on the 1998 version of the FRA's manual, see DEIS 4-238 n.170, even though the manual was updated in 2005 and again in 2012. The current version of the FRA noise manual states: "[I]n view of the sensitivity of the noise criteria to the existing noise exposure, careful characterization of the existing noise is important." FRA Manual for High-Speed Ground Transportation Noise and Vibration Impact Assessment 3-9 (2012). And when the project "is to be shared with an existing rail transit corridor . . . Noise measurements at representative locations along the corridor are essential to estimate existing noise accurately." Id. At 4-13 (emphasis added). The DEIS does not do any of this. It also omits any discussion of noise impact during construction, as required by federal regulations. See 64 Fed. Reg. 28556.
Response	Thank you for pointing out this apparent oversight. The reference to the 1998 version of FRA Manual is corrected to reflect the use of the 2012 version. The reference does not affect

the analysis or change the conclusions of the Tier 1 FEIS. For the General Noise Assessment used in the Tier 1 FEIS, noise measurements are not required to estimate existing levels. According to the FTA/FRA guidance, existing noise levels were estimated based on the noise exposure values in Table 5-7 of the FTA Manual. This method of assessment is appropriate for a 400-plus-mile corridor in a Tier 1 FEIS. As appropriate for this point in the program development, the Tier 1 FEIS states that there is the potential for severe noise impacts throughout the program area. NYSDOT will conduct a detailed noise analysis, including a comprehensive noise measurement program, for the Tier 2 analysis. This analysis would require further engineering and operational analysis along with site-specific land use data throughout the corridor. Similarly, without detailed engineering design to develop detailed construction phasing, staging and equipment usage by location, a construction noise impact analysis cannot be conducted at this time.

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment RR-3-54 The DEIS fails to tabulate impacted buildings, another required step. Part of the General Noise Assessment is a “Noise Impact Inventory,” which requires the assessor to “tabulate buildings and sites that lie within” previously mapped “impact contours,” and to “[p]repare summary tables showing the number of buildings and dwelling units within each impact zone for each alternative.” FRA Noise Manual at 4-17. The DEIS notes simply that “there were noise sensitive receptors within” the area that might be affected, providing no detail as to their location, type, or quantity. DEIS 4-240. It then states that “a detailed noise assessment is necessary to determine whether noise levels would exceed the applicable impact criteria.” Id. At 4-248. This approach contradicts the FRA and New York’s promise that the DEIS would “[a]ssess locations where the change in noise levels would result in severe, moderate, or no impact.” Tier 1 EIS Environmental Impact Assessment Methodologies 28 (2011).

Response Section 4.21 (Noise and Vibration) of the Tier 1 EIS correctly follows the steps described in FRA’s high-Speed Ground Transportation Noise and Vibration Impact Assessment and the program’s Environmental Impact Assessment Methodologies (2011). Chapter 4 of the FRA Manual contains procedures of an initial evaluation of potential noise impacts from a high-speed rail project. “The goals of an initial noise evaluation are to identify the potential for impacts and to determine their order of magnitude so that a more detailed analysis can be done in areas where significant impacts are found during later phases of the design process. [Emphasis added.] The Manual further states that a General Assessment be conducted in the early planning stage to help establish most promising corridor locations. Any estimate of the number of buildings impacted would require detailed information that is not available at this conceptual level of design. Tier 2 analyses would include a more detailed analysis including the number of receptors that would experience impacts from the Build Alternatives. Exhibit 4-32 of the Tier 1 FEIS summarizes the potential impacts to each of the ten segments of the Empire Corridor. As shown in Exhibit 4-32 and Section 4.21.4 of the Tier 1 FEIS, five segments of the corridor are anticipated to experience severe impacts and a sixth segment would experience moderate impacts. Four segments would experience reductions in noise levels.

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment RR-3-55 Nor does the DEIS include the required preliminary assessment of what noise mitigation would be effective. “The final step of the General Assessment is to estimate the noise mitigation measures required to minimize the number of impacts.” FRA Noise Manual at 4-18. The Manual provides procedures for making “order-of-magnitude” estimates of the height of barriers that would be sufficient to mitigate noise, and to estimate the cost involved. Id. At 4-19. The FRA and New York had previously said that they would “[e]xamine the feasibility of potential mitigation measures” during Tier 1. See Tier 1 EIS Environmental Impact Assessment Methodologies 28. However, the DEIS simply offers a

laundry list of possible mitigation approaches and then defers the feasibility analysis to Tier 2. DEIS 4-249.

Response Section 4.21.5 of the Tier 1 FEIS discusses three different types of mitigation options: noise source mitigation measures; path control mitigation measures; and receptor control measures. Several measures in each of the categories are also provided as potential measures that would be investigated in Tier 2 analysis, as needed and appropriate.

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment RR-3-56 There must be adequate separation—at least 30 feet, measured from track center to track center—between the track used for freight service and the track used for passenger service exceeding 90 m.p.h. This will account for the risk posed by the wind forces generated by passing high-speed trains, as well as by the dust, debris and ice that may be dislodged by a passing train. It also accounts for potential encroachment by maintenance crews. The FRA has emphasized the need for adequate separation, deeming it a “critical” issue requiring careful consideration. FRA, High-Speed Passenger Rail Safety Strategy 13 (2009). And a recent FRA Technical Report stated that “while having track centers less than 25 feet [apart] may have been acceptable for past transit lines” running at lower speeds on shared right-of-ways, “operating high-speed trains on adjacent tracks may be unacceptable” today. FRA, Investigating Technical Challenges and Research Needs Related to Shared Corridors for High-Speed Passenger and Railroad Freight Operations 13 (2013).

Response There is no industry standard or design criterion that declares 30 feet of separation between 110 mph passenger and lower-speed freight tracks as either adequate or inadequate. Moreover, passenger and freight trains traveling in opposite directions at speeds approaching 160 mph for passenger trains are comingled on the Northeast Corridor (NEC) with track centers nearing 15 feet in many locations. The FRA document acknowledges examples of existing light rail transit vehicles and freight trains comingled or at closer than 30 feet track centers without commenting on the 30’ separation as a requirement. Since a distance of 30 feet was recommended by CSXT for passenger trains traveling in speeds in excess of 90 mph, the conceptual alignment of Alternative 110 strives to meet this recommendation.

FRA, Vision for High-Speed Passenger Rail in America (2009), Page 8, states that “the advent of Positive Train Control (PTC), crash energy management, and other advances provides the United States with an opportunity to revise its safety approach in a manner that accelerates the development of high-speed rail...” There is no suggestion in the commenter’s cited reference that 25 or 30 feet is or is not acceptable; the reference only refers the matter for future study.

In addition, page 26 of the report, “Investigating Technical Challenges and Research Needs Related to Shared Corridors for High-Speed Passenger and Railroad Freight Operations (2013)” states that “CSX meanwhile has only agreed to 90 mph passenger trains on the Empire Corridor from New York to Buffalo,” with no track center mentioned.

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment RR-3-57 There must be adequate grade separation and warning mechanisms at all public and private grade crossings. There are almost 200 such crossings on the Western Corridor. See DEIS 2-346. The grade separation must satisfy the standards established by the FRA. See Office of Railroad Safety, Highway- Rail Grade Crossing Guidelines for High-Speed Rail (Nov. 2009). Alternatives 90A, 90B and 110 present complex technical challenges to ensure properly functioning warning systems. The DEIS does not discuss those challenges, or the legal issues surrounding private, at-grade crossings.

Response Section 3.4.4 of Appendix E of the Tier 1 FEIS discusses the both the public and private grade crossings in the different sections of the Empire Corridor and recognizes that that current private crossings are equipped with “passive warning systems.” The importance of

safe railroad operation is recognized and discussed in Section 2.6 of the Tier 1 FEIS. FRA/NYS DOT recognizes that more detailed study and design, as necessary, is required in the Tier 1 FEIS for each at-grade crossing that remains in each of the Build Alternatives. The analysis is anticipated to include whether these at-grade crossings would be either enhanced or eliminated, depending on the final design speed and be consistent with the FRA's regulations and guidance.

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment RR-3-58 Fences with detection circuits may need to be installed to provide early warnings of derailments. In addition, access control fencing must be installed in areas where there could be pedestrians or trespassers.

Response All feasible safety measure including those cited by the commenter will be considered, if appropriate as the design stages progress and will be analyzed in the Tier 2 analysis. The Tier 1 FEIS addresses fencing and other safety features for the Preferred Alternative in Section 3.3.3, under the "Safety" section. The Tier 1 FEIS accounts for several types of fencing and warning systems:

- 1) Perimeter fencing has been accounted for in the cost estimate on both sides of the ROW.
- 2) Private crossings will be protected by fence gates and signs, not active warning systems.
- 3) Existing grade crossing warning/protection will be upgraded as needed with crossing gates, signs, crossbucks, flashers, etc.

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment RR-3-59 Ensuring that customers have access to freight service must be accomplished in a way that does not require freight trains to operate on dedicated passenger tracks.

Response As stated in Sections ES-6, 1.5 and 1.6, one of the High Speed Empire Corridor Program's performance objectives is to "Minimize interference with freight rail operations" and one of its goals includes "Contribute to economic revitalization by accommodating forecasted growth in population and employment and corridor rail freight operations." NYSDOT is committed to reaching the objectives and goals including ensuring working with CSXT to develop a program that accommodates all users, including freight customers. Localized controlled sidings, passenger bypasses and dedicated freight/passenger track segments can be used to minimize congestion and reduced speeds resulting from operations of freight and passenger trains on each alternative. The proposed flyovers are a capital intensive, but effective infrastructure improvement that could be designed to reduce passenger/freight interference. The concepts for the three flyovers presented in this Tier 1 FEIS would be developed further in Tier 2 design. Other alternatives could be explored by developing a series of joint improvements both for station access and layouts and track/signal systems and alignment.

Commenter Renjel, Jr., Louis E., Vice President, CSX Transportation

Comment RR-3-60 The DEIS fails to answer the question of who will own the proposed passenger railroad and its infrastructure, and who will operate and maintain the railroad. Consequently, it fails to consider whether that entity—or entities—will have the legal and financial capacity to undertake the mitigation and compensation measures the DEIS contemplates. As noted above, CSXT will not own, maintain, dispatch or operate on passenger-exclusive tracks. The DEIS must be revised to address this glaring omission. It must identify the entity, or at least the possible entities, that will own and that will operate the passenger rail service on the Empire Corridor. It must explain how these entities can be expected to pay the substantial expenses the DEIS relies upon. And it must confirm that they will have the legal capacity to carry out their responsibilities. An EIS that evaluates alternatives based on "unexplained assumptions" violates NEPA

Response	Section 2.1 reviews the ownership, operating and maintenance responsibilities for the Empire Corridor, and changes to the current situation have not been negotiated. At this stage of the program, ownership, operation and maintenance of the railroad has not been formally identified. NYSDOT will provide further information as the program progresses and further details are developed and will be discussed and provided in the Tier 2 analysis.
Commenter	Renjel, Jr., Louis E., Vice President, CSX Transportation
Comment RR-3-61	An Environmental Impact Statement must discuss “whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.” 40 C.F.R. § 1508.27. Here, the DEIS fails to properly analyze the project’s negative impact on air quality, an issue at the heart of NEPA. As discussed above, the DEIS does not adequately examine the environmental impact of moving freight traffic off the rails and onto the highways, and the attendant obligations under the Clean Air Act.
Response	Section 4.19 of the Tier 1 EIS analyzes potential impacts to air quality and Section 4.20.4 includes an analysis and discussion of greenhouse gas emissions, which are both anticipated to result in net reductions of air pollutants. Further analyses will be conducted in Tier 2 analysis as the program progresses. The Tier 1 FEIS determined that the none of the Build Alternatives would negatively affect freight train travel times, and therefore no substantial shift of freight traffic from rails to highways would be expected to occur in the future with this program.
Commenter	Renjel, Jr., Louis E., Vice President, CSX Transportation
Comment RR-3-62	The DEIS largely avoids questions of cumulative impact. Regulations issued by the Council on Environmental Quality, the Department of Transportation and the FRA all require evaluation of a project’s cumulative impact. The DEIS does not address the impact on upstate New York air service if those passengers do in fact divert to rail.
Response	Section 4.24 of the Tier 1 FEIS analyzes potential indirect and cumulative impacts under the Build Alternatives. As discussed in Appendix B, Ridership and Revenue Forecasting, it is projected that the mode share for air travel, which was 1.113% in 2012, will decrease to a range of 0.881% to 0.951% under the Build Alternatives in 2035. Impacts from ridership under each of the Build Alternatives, including passengers shifting from air travel and other modes to rail, have been incorporated into pertinent sections of Appendix E and Chapter 4 of the Tier 1 FEIS.
Commenter	Renjel, Jr., Louis E., Vice President, CSX Transportation
Comment RR-3-63	The DEIS lacks any analysis of high-speed passenger rail as a nascent technology that has yet to be implemented anywhere in the United States.
Response	Section 3.1 discusses the improvements to station stops, equipment and other physical improvements required under each of the Build Alternatives. Such improvements utilize established technologies for infrastructure and rolling stock such as employing existing rail coach and locomotive equipment and standard track geometries and signal systems. Even Alternative 125 will use currently available locomotive and coach configurations already standard on Amtrak's Acela express service.
Commenter	Renjel, Jr., Louis E., Vice President, CSX Transportation
Comment RR-3-64	The DEIS does not adequately address the difficulties that will arise from building the project section-by-section. There is no analysis of how the work along the Empire Corridor will be staged, which segments will be constructed first, and how a segmented build process will impact operations. In light of the DEIS’s assumption that the entire project will take decades to complete, the failure to analyze this critical issue deprives decisionmakers of information they need to reach a reasoned judgment.

Response	<p>As the program progresses, the Tier 2 process will include more details on the means and methods of program construction and potential impacts in each segment. Section 3.3 describes construction staging for Alternatives 90B and 110: “For the 90 mph and 110 mph Alternatives, the new higher speed tracks for passenger trains would be installed on the north side of the existing railroad alignment. This would avoid conflicts with the existing train movements on the route while the new tracks for the higher speed were being installed and would minimize construction impacts on rail traffic.”</p> <p>To account for complex track construction phasing, additional costs were added in the program cost estimate for certain sections. Various areas along the corridor will require complex phasing plans to maintain existing freight and passenger service during construction of the proposed alternatives. A value ranging from 20% to 150% of the trackwork costs was assigned based on expected complexity.</p> <p>Staging and phasing will be coordinated so that new track and crossovers are installed off-peak and cutover prior to removals/realignment of existing track. Outages will be coordinated with CSXT to limit impact to daily operations. Preferences will be made to piggyback on adjacent outages required for annual maintenance/SOGR work.</p>
Commenter	Renjel, Jr., Louis E., Vice President, CSX Transportation
Comment RR-3-65	The DEIS does not address the project’s impact on elderly and handicapped individuals.
Response	As discussed in Section 4.3.4, each of the Build Alternatives are anticipated to provide positive benefits to the general traveling public including those at least 65 years of age and disabled individuals, primarily by improving mobility and travel choices within the corridor. The Environmental Justice and Title VI analysis has been modified to include persons at least 65 years of age and those with disabilities. In addition, Limited English Proficiency (LEP) populations have also been identified as part of this impact assessment. The results of this analysis are presented in Section 4.4 of the Tier 1 FEIS and in Appendix G.4.
Commenter	Renjel, Jr., Louis E., Vice President, CSX Transportation
Comment RR-3-66	The DEIS fails to include any discussion of what steps will be taken to ensure that CSXT has sufficient protection from potential liability arising from passenger operations on its right-of-way.
Response	Freight and passenger operations are comingled on the right-of-way today. Any potential changes to current agreements addressing liability will be addressed in the future.
Commenter	Renjel, Jr., Louis E., Vice President, CSX Transportation
Comment RR-3-67	I am writing on behalf of CSX Transportation (“CSXT”) to request a 30-day extension to the deadline for comments on the Tier One Draft Environmental Impact Statement (“DEIS”) for the High Speed Rail Empire Corridor Program. We ask that the deadline be extended from March 24, 2014 to April 23, 2014.
Response	The Public Comment Period was extended to April 30, 2014.
Commenter	Renjel, Jr., Louis E., Vice President, CSX Transportation
Comment RR-3-68	Because the 125 alternative would create a largely separate passenger-rail corridor that would minimize interference with freight traffic, it is the most promising of the build alternatives.
Response	Because Alternative 125 would maintain regional service on the existing Empire Corridor, it would offer no benefits or improvements to existing freight service compared to the Base

Alternative. Therefore, it would not perform as well as Alternatives 90B or 110, which provide additional trackage to better segregate passenger and freight rail.

Commenter **Smith, Michael V., President, Finger Lakes Railway Corp.**

Comment
RR-4-1 FGLK believes that the primary focus should be on the 90 mph option with emphasis on infrastructure improvements that will improve the speed, consistencies, and efficiencies of operations for both freight and passenger services.

Response Thank you for taking the time to review the alternatives outlined in the Tier 1 EIS for the High Speed Rail Empire Corridor Program. Your comment supporting the 90A and 90B Alternatives has been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.

Commenter **Smith, Michael V., President, Finger Lakes Railway Corp.**

Comment
RR-4-2 Since freight service is primary on the Empire Corridor, connecting and growing freight operations, such as FGLK's and the Susquehanna's at Solvay, NY (as two examples), should be unimpeded and physically enhanced as part of the improvement program(s).

Response Your participation and comments from New York State railroads comprise an important part of the Tier 1 EIS process. The importance of preserving and improving freight rail traffic has been an important factor in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B would result in the best on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains (of all of the alternatives considered, as shown on Exhibit 6-8 of the Tier 1 FEIS. The installation of additional third and fourth tracks under Alternative 90B would add capacity and provide the ability to route passenger trains around freight trains even while passenger trains operate at higher speeds. In 2035, Alternative 90B would also result in one of the lowest trip times for freight between Selkirk Yard, outside Albany, and Buffalo.

Commenter **Mowery, Chad, Genesee & Wyoming, Inc.**

Comment
RR-5-1 I am concerned that the proposed high speed rail corridor would negatively affect business operations.

Response Thank you for reviewing the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. The goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The importance of preserving and improving freight rail traffic has been an important factor in the selection of Alternative 90B as the Preferred Alternative. Please refer to the detailed response to comment RR-4-2 summarizing Alternative 90B's favorable performance with respect to freight operations compared to the Base and most of the other alternatives.

Commenter **Mowery, Chad, Genesee & Wyoming, Inc.**

Comment
RR-5-2 I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.

Response We appreciate your review and comments discussing the alternatives for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the

selection of the Preferred Alternative, Alternative 90B. Minimizing interference with freight rail operations is one of the six performance objectives of the High Speed Rail Empire Corridor Program. As noted above, in 2035, Alternative 90B would involve the least delay-minutes per 100 train miles operated for freight trains (of all of the alternatives considered), and would result in one of the lowest trip times for freight between Selkirk Yard, outside Albany, and Buffalo. As described in Chapter 6 of the Tier 1 FEIS, Alternative 90B would improve freight operations compared to the Base Alternative.

Commenter	Cheshier, Gregory A., Vice President of Operations, Genesee Valley Transportation Company, Inc.
Comment RR-6-1	Genesee Valley Transportation encourages the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90mph A, 90mph B, 110mph and 125mph alternatives, put forth in the High Speed Rail Empire Corridor Tier 1 Draft Environmental Impact Statement (DEIS), commingle freight and high speed passenger rail, significantly constraining freight rail operations.
Response	Participation by New York State railroads is a valued part of the process for the Tier 1 EIS for the High Speed Rail Empire Corridor Program. Minimizing interference with freight rail operations is one of the six performance objectives of the High Speed Rail Empire Corridor Program. The importance of preserving and improving freight rail traffic to the economy of New York State has been an important factor in the selection of Alternative 90B as the Preferred Alternative. Please refer to the detailed response to comment RR-4-2 summarizing Alternative 90B's favorable performance with respect to freight operations compared to the Base and most of the other alternatives.
Commenter	Blabey II, Eugene H., President/CEO, Avon & Lakeville Railroad Corporation, Livonia
Comment RR-7-1	I'm concerned that, if implemented, proposals for high speed passenger trains on the rail corridor linking Buffalo and Schenectady will negatively impact service from CSX at Genesee Junction (Henrietta, NY).
Response	Participation by New York State railroads is a valued part of the process for the Tier 1 EIS for the High Speed Rail Empire Corridor Program. The importance of preserving and improving freight rail traffic to the economy of New York State was an important factor in the selection of Alternative 90B as the Preferred Alternative. As indicated on Exhibit 6-8 of the Tier 1 FEIS, Alternative 90B would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered in 2035, and would result in one of the lowest trip times for freight between Selkirk Yard, outside Albany, and Buffalo.
Commenter	Blabey II, Eugene H., President/CEO, Avon & Lakeville Railroad Corporation, Livonia
Comment RR-7-2	I urge NYSDOT to do everything it can to help the economy in upstate New York by protecting CSX freight service on the Empire Corridor. Please select the base alternative in the DEIS.
Response	Thank you for your review and comment on the alternatives in the Tier 1 DEIS. The importance of preserving and improving freight rail traffic to the economy of New York State was an important factor in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B would result in better segregation of passenger trains from freight trains than the Base Alternative. The installation of approximately 370 miles of trackage under Alternative 90B would add capacity and would provide the ability to route passenger trains around freight trains even while passenger trains operate at higher speeds.

Commenter	Goss, Raymond A., President, Massena Terminal Railroad
Comment RR-8-1	The Massena Terminal Railroad wishes to express its support for the "Base Alternative"... We therefore respectfully request your support of the "Base Alternative"...
Response	Thank you for your review and comment on the alternatives in the Tier 1 DEIS. As noted above, the Preferred Alternative (Alternative 90B) will add approximately 370 miles of tracks, resulting in better segregation of passenger trains from freight trains than the Base Alternative.
Commenter	Fogel, David, Deputy Director, Metro-North Railroad
Comment RR-9-1	Metro-North generally supports increased intercity traffic as long as no detrimental impact, including financial, results on the predominant commuter rail service. A corridor-wide operating and capital (normalized replacement) cost allocation cost sharing mechanism based on the federal Passenger Rail Investment and Improvement Act (PRIIA) Section 212 Northeast Corridor cost allocation formula would be an appropriate model for an Empire Corridor South shared use mechanism.
Response	Thank you for taking time to review the Tier 1 DEIS for the High Speed Rail Empire Corridor Program and sharing your comments on use of a cost-allocation and cost-sharing mechanism based on Section 212 of PRIIA for commuter and intercity passenger rail. Chapter 5 of the Tier 1 FEIS indicates that future cost-sharing arrangements will be governed by Section 209 of PRIIA. The Service Development Plan cites PRIIA NEC requirements and indicates that, for the Empire Corridor, NYSDOT will share both the capital and operating and maintenance costs of the program according to formulas based on shared benefits and intensity of use of the infrastructure by the parties. Tier 2 assessments for the program, as the design is advanced, will include further evaluation and refinement of funding and cost-sharing and cost allocation mechanisms and models.
Commenter	Fogel, David, Deputy Director, Metro-North Railroad
Comment RR-9-2	Please note that Metro-North is planning a future phase of the Penn Station Access project that would add a new Manhattan West Side link via Amtrak's Empire Connection for Hudson Line trains to serve Penn Station with a potential for new intermediate stations in Manhattan.
Response	The future Penn Station Access for Metro North via the West Side Connection has been included in Exhibit G-43 in Appendix G.21, Indirect and Cumulative Impacts. The interrelationship with this project will be further considered when the design is advanced in the Tier 2 assessments.
Commenter	Fogel, David, Deputy Director, Metro-North Railroad
Comment RR-9-3	Please note that based on preliminary engineering, the Poughkeepsie Main Line Track and interlockings locations shown for the Build Alternative Engineered Track Schematics are subject to change.
Response	Thank you for sharing a reminder that the Poughkeepsie Main Line and interlockings locations for the Build Alternative Engineered Track Schematics may change. As the Empire Corridor High Speed Rail program progresses to the Tier 2 assessments, detailed evaluation of potential designs and further coordination with MetroNorth regarding Hudson Line improvements will be performed.

Commenter	Dingman, Robert, President, New York & Lake Erie Railroad
Comment RR-10-1	We are concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Participation by New York State railroads is a valued part of the process for the Tier 1 EIS for the High Speed Rail Empire Corridor Program. As indicated on Exhibit 6-8 of the Tier 1 FEIS, Alternative 90B would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered in 2035, and would result in one of the lowest trip times for freight between Selkirk Yard, outside Albany, and Buffalo.
Commenter	Dingman, Robert, President, New York & Lake Erie Railroad
Comment RR-10-2	I, Robert O. Dingman, Jr., President of the New York & Lake Erie Railroad, encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for your review and comment on the alternatives in the Tier 1 DEIS. The importance of preserving and improving freight rail traffic to the economy of New York State was an important factor in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B would result in better segregation of passenger trains from freight trains than the Base Alternative. The installation of approximately 370 miles of tracks under Alternative 90B would add capacity and provide the ability to route passenger trains around freight trains even while passenger trains operate at higher speeds.
Commenter	Fenno, Nathan R., President, The New York Susquehanna and Western Railway Corporation
Comment RR-11-1	we encourage the selection of the base alternative to maintain our ability to continue to provide safe, reliable and efficient service. The proposed 90A, 90B and 110 alternatives put forth in the DEIS comingle freight and high speed rail significantly constrain freight rail operations.
Response	Thank you for your review and comment on the alternatives in the Tier 1 DEIS. As noted above, the Preferred Alternative (Alternative 90B) will add approximately 370 additional miles of additional tracks, resulting in better segregation of passenger trains from freight trains than the Base Alternative.
Commenter	Saracen, Sandra, Ontario Midland Railroad Corp.
Comment RR-12-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Participation by New York State railroads is a valued part of the process for the Tier 1 EIS for the High Speed Rail Empire Corridor Program. The goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The importance of preserving and improving freight rail traffic to the economy of New York State has been an important factor in the selection of Alternative 90B as the Preferred Alternative. Please refer to the detailed response to comment RR-4-2 summarizing Alternative 90B's favorable performance with respect to freight operations compared to the Base and most of the other

alternatives.

Commenter	Saracen, Sandra, Ontario Midland Railroad Corp.
Comment RR-12-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for reviewing the alternatives in the Tier 1 DEIS. As noted above, the Preferred Alternative (Alternative 90B) will add trackage with approximately 370 additional miles, resulting in better segregation of passenger trains from freight trains than the Base Alternative.
Commenter	Fink, David A., President, Pan Am Southern LLC
Comment RR-13-1	PAS is also concerned with the potential impact of the Project on the ability of PAS to efficiently interchange traffic with CSXT in New York and elsewhere.
Response	Participation by New York State railroads is a valued part of the process for the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. The importance of preserving and improving freight rail traffic was an important factor in the selection of Alternative 90B as the Preferred Alternative. As indicated on Exhibit 6-8 of the Tier 1 FEIS, Alternative 90B would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered in 2035, and would result in one of the lowest trip times for freight between Selkirk Yard, outside Albany, and Buffalo. Alternative 90B would result in better segregation of passenger trains from freight trains than the Base Alternative. The installation of approximately 370 miles of additional tracks under Alternative 90B would add capacity and would provide the ability to route passenger trains around freight trains even while passenger trains operate at higher speeds.
Commenter	Fink, David A., President, Pan Am Southern LLC
Comment RR-13-2	Since alternatives 90A, 90B and 110 will each cause commingling of freight and passenger service, there is a real concern that these options will substantially limit the ability of railroads to grow to meet heightened customer demand. For that reason, PAS opposes these proposals.
Response	Thank you for reviewing the alternatives in the Tier 1 DEIS. As noted above, the Preferred Alternative (Alternative 90B) will add approximately 370 miles of tracks, resulting in better segregation of passenger trains from freight trains than the Base Alternative.
Commenter	Goss, Raymond A., President, Rochester & Southern Railroad, Inc.
Comment RR-14-1	The Rochester & Southern Railroad wishes to express its support for the "Base Alternative" We therefore respectfully request your support of the "Base Alternative"...
Response	Thank you for reviewing the alternatives in the Tier 1 DEIS. The importance of preserving and improving freight rail traffic to the economy of New York State was an important factor in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B would result in better segregation of passenger trains from freight trains than the Base Alternative. The installation of approximately 370 miles of additional tracks under Alternative 90B would add capacity and would provide the ability to route passenger trains around freight trains even while passenger trains operate at higher speeds.

Commenter	Galloway, Drew, Chief of Planning, Amtrak
Comment RR-15-1	Chief of planning for Amtrak for the Northeast Corridor. What I am happy to endorse is the process. In that respect, I think the alternatives that have been discussed and evaluated are pragmatic, spanning in range in terms of investment potential and in ridership and in revenue, and from an Amtrak perspective, we are very pleased to support the process.
Response	Thank you for offering your comments on the process for the Tier 1 DEIS for the High Speed Rail Empire Corridor Program.

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0-85-1	Schiffer, William, Newhaven Distribution Services
0-85-2	Schiffer, William, Newhaven Distribution Services
0-86-1	Brown, Ike, President, NFI Intermodal
0-86-2	Brown, Ike, President, NFI Intermodal
0-87-1	Jones, Michael, North Dakota Mill & Elevator Association
0-88-1	Butts, Joe, NOVA Chemicals
0-89-1	Long, Raymond, NRG Energy
0-89-2	Long, Raymond, NRG Energy
0-90-1	Roberson, Rob, Corporate Logistics Manager, Nucor Corporation
0-90-2	Roberson, Rob, Corporate Logistics Manager, Nucor Corporation
0-91-1	Hatfield, Jane, Owensboro Riverport
0-91-2	Hatfield, Jane, Owensboro Riverport
0-92-1	Dropkin, Robin, Executive Director, Parks & Trails New York (PTNY)
0-92-2	Dropkin, Robin, Executive Director, Parks & Trails New York (PTNY)
0-92-3	Dropkin, Robin, Executive Director, Parks & Trails New York (PTNY)
0-92-4	Dropkin, Robin, Executive Director, Parks & Trails New York (PTNY)
0-92-5	Dropkin, Robin, Executive Director, Parks & Trails New York (PTNY)
0-92-6	Dropkin, Robin, Executive Director, Parks & Trails New York (PTNY)
0-92-7	Dropkin, Robin, Executive Director, Parks & Trails New York (PTNY)
0-92-8	Dropkin, Robin, Executive Director, Parks & Trails New York (PTNY)
0-92-9	Dropkin, Robin, Executive Director, Parks & Trails New York (PTNY)
0-92-10	Dropkin, Robin, Executive Director, Parks & Trails New York (PTNY)
0-93-1	Rinaldi, Philip L., Chief Executive Officer, Philadelphia Energy Solutions
0-94-1	Steubing, Sandy, Spokesperson, People of Albany United for Safe Energy
0-94-2	Steubing, Sandy, Spokesperson, People of Albany United for Safe Energy
0-95-1	Clark, Sharon, Perdue AgriBusiness
0-95-2	Clark, Sharon, Perdue AgriBusiness
0-96-1	Spieckermann, Phil, POET Ethanol Products
0-96-2	Spieckermann, Phil, POET Ethanol Products
0-96-3	Spieckermann, Phil, POET Ethanol Products

COMMENT #	COMMENTER
O-97-1	Von Dohlen, Gerard, Port Newark Refrigerated Warehouse
O-97-2	Von Dohlen, Gerard, Port Newark Refrigerated Warehouse
O-98-1	Hayes, Ken, PSL North America
O-98-2	Hayes, Ken, PSL North America
O-99-1	Jordan, Jacob, Executive Director, Queen City Rail Trails
O-99-2	Jordan, Jacob, Executive Director, Queen City Rail Trails
O-99-3	Jordan, Jacob, Executive Director, Queen City Rail Trails
O-100-1	Esposito, Paul, Railex
O-100-2	Esposito, Paul, Railex
O-101-1	Fesen, Michael, President, Railroads of New York (RONY)
O-102-1	Feller, DeWain, Vice President, Reconnect Rochester
O-102-2	Feller, DeWain, Vice President, Reconnect Rochester
O-102-3	Feller, DeWain, Vice President, Reconnect Rochester
O-102-4	Feller, DeWain, Vice President, Reconnect Rochester
O-102-5	Feller, DeWain, Vice President, Reconnect Rochester
O-102-6	Feller, DeWain, Vice President, Reconnect Rochester
O-102-7	Feller, DeWain, Vice President, Reconnect Rochester
O-102-8	Feller, DeWain, Vice President, Reconnect Rochester
O-102-9	Feller, DeWain, Vice President, Reconnect Rochester
O-103-1	Pearson, Ben, Republic Services
O-103-2	Pearson, Ben, Republic Services
O-104-1	Johnson, Kenneth, Republic Steel
O-104-2	Johnson, Kenneth, Republic Steel
O-105-1	Rotondo, Rob, Rotondo Warehouse
O-106-1	Dietz, Steven, RPMG
O-106-2	Dietz, Steven, RPMG
O-107-1	Anzevino, Jeffrey, Director of Land Use Advocacy, Scenic Hudson, Inc.
O-107-2	Anzevino, Jeffrey, Director of Land Use Advocacy, Scenic Hudson, Inc.
O-107-3	Anzevino, Jeffrey, Director of Land Use Advocacy, Scenic Hudson, Inc.
O-107-4	Anzevino, Jeffrey, Director of Land Use Advocacy, Scenic Hudson, Inc.
O-107-5	Anzevino, Jeffrey, Director of Land Use Advocacy, Scenic Hudson, Inc.
O-108-1	Edic, Steven, Plant Manager, Scepter New York
O-108-2	Edic, Steven, Plant Manager, Scepter New York
O-109-1	Rhode, Steve, Vice President - Rail, Schneider National Carriers, Inc.
O-109-2	Rhode, Steve, Vice President - Rail, Schneider National Carriers, Inc.
O-110-1	Pagliuca, David, Schnitzer
O-110-2	Pagliuca, David, Schnitzer
O-111-1	Shea, Harry, Shea Lumber
O-111-2	Shea, Harry, Shea Lumber
O-112-1	Hodgkiss, Charles, Rail Transport Consultant, Shelly Materials
O-113-1	Grandstaff, Jeff, ShipCarsNow
O-113-2	Grandstaff, Jeff, ShipCarsNow
O-113-3	Dilling, Travis, ShipCarsNow
O-113-4	Dilling, Travis, ShipCarsNow
O-113-5	Hamilton, Christa, ShipCarsNow
O-113-6	Hamilton, Christa, ShipCarsNow
O-114-1	Barbari, Mark, Smart Warehousing
O-114-2	Barbari, Mark, Smart Warehousing
O-115-1	Manno, James, Sonwil Distribution Center
O-115-2	Manno, James, Sonwil Distribution Center
O-116-1	Shields, Jamison, SP Fiber Technologies
O-116-2	Shields, Jamison, SP Fiber Technologies
O-117-1	Berti, Joseph, Speed Global Services

COMMENT #	COMMENTER
O-117-2	Berti, Joseph, Speed Global Services
O-118-1	Byrd, Bruce, SSAB
O-118-2	Byrd, Bruce, SSAB
O-119-1	Cummins, John, Suburban Propane, LP
O-120-1	Baldock, Samantha, SUNY Fellow on Women & Public Policy, Center State Corporation for Economic Opportunity (CEG)
O-120-2	Baldock, Samantha, SUNY Fellow on Women & Public Policy, Center State Corporation for Economic Opportunity (CEG)
O-121-1	Sarin, Peter, Synagro
O-121-2	Sarin, Peter, Synagro
O-122-1	Bobitt, James, Tate & Lyle
O-122-2	Bobitt, James, Tate & Lyle
O-123-1	Tighe, John, Tighe Logistics Group
O-123-2	Tighe, John, Tighe Logistics Group
O-124-1	Bard, James, United States Steel Corporation
O-124-2	Bard, James, United States Steel Corporation
O-125-1	Seligman, Joel, President, University of Rochester
O-126-1	Thomas, Ph.D., Alexander R., Director, Utica College Center for Small City and Rural Studies
O-126-2	Thomas, Ph.D., Alexander R., Director, Utica College Center for Small City and Rural Studies
O-126-3	Thomas, Ph.D., Alexander R., Director, Utica College Center for Small City and Rural Studies
O-126-4	Thomas, Ph.D., Alexander R., Director, Utica College Center for Small City and Rural Studies
O-127-1	Applegate, Ken, Senior Vice-President/Transportation, Valero
O-127-2	Applegate, Ken, Senior Vice-President/Transportation, Valero
O-128-1	Cadieux, Shirley, Warehouse Mgr., Valleypac Industries, Inc.
O-129-1	Hammer, Virginia, President, Pine Hills Neighborhood Association
O-129-2	Hammer, Virginia, President, Pine Hills Neighborhood Association
O-130-1	Vaugh, Nick, Albany-Colonie Regional Chamber of Commerce
O-130-2	Vaugh, Nick, Albany-Colonie Regional Chamber of Commerce
O-131-1	Calsolaro, Dominick, Reclaim Our Waterfront (ROW)
O-131-2	Calsolaro, Dominick, Reclaim Our Waterfront (ROW)
O-131-3	Calsolaro, Dominick, Reclaim Our Waterfront (ROW)
O-131-4	Newman, William, Reclaim Our Waterfront (ROW)
O-132-1	Vamos, Ivan, New York Bicycling Coalition
O-132-2	Vamos, Ivan, New York Bicycling Coalition
O-132-3	Vamos, Ivan, New York Bicycling Coalition
O-132-4	Vamos, Ivan, New York Bicycling Coalition
O-132-5	Vamos, Ivan, New York Bicycling Coalition
O-132-6	Vamos, Ivan, New York Bicycling Coalition
O-132-7	Botzman, Harvey, New York Bicycling Coalition/Rochester Cycling Alliance
O-132-8	Botzman, Harvey, New York Bicycling Coalition/Rochester Cycling Alliance
O-132-9	Botzman, Harvey, New York Bicycling Coalition/Rochester Cycling Alliance
O-133-1	Parikh, Rohan, Albany Bicycle Coalition

Commenter	Blinkoff, Jason, Executive Vice President, A&R Bulk-Pak, Inc., A&R Bulk-Pak, Inc.
Comment O-1-1	<p>Our company, A&R Bulk-Pak, receives plastics and grains by railcar which are transloaded into containers for overseas export and domestic distribution. In 2013, we handled 935 freight railcars and based on 1st quarter results for 2014 to date, we expect a 20-25% increase in rail freight traffic for this year. In addition, we are in the midst of infrastructure development which will push our yearly rail volume higher while continuing to reduce inbound truck traffic in and around the busy Port of New York/New Jersey.</p> <p>I appreciate the state's continued focus on economic development and pro-business efforts, but I am concerned the proposed high speed rail corridor will negatively affect our business operations. Our company especially relies on the existing freight rail network for efficient, reliable, and economical transportation of goods. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail and will significantly constrain freight rail operations into our Elizabeth and Avenel facilities. Compromised or limited service on the current freight network will force my company to alter our business operations and shift our cargo receipt pattern from rail to truck thereby increasing cost, increasing our environmental footprint, and increasing truck traffic on New Jersey and New York roadways as 50% of our inbound rail freight originates in Northwestern New York State.</p>
Response	<p>Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail. Specifically in the Tier 1 EIS, Chapters 3 and 4 discuss the positive impacts of the program, with Section 4.3 Regional Population and Employment, and Business Districts, discussing how the program will create employment opportunities and support the labor markets in the regions served by the improved rail service. The importance of preserving and improving freight rail traffic to the economy of New York State has been an important factor in the selection of a preferred Alternative.</p>
Commenter	Blinkoff, Jason, Executive Vice President, A&R Bulk-Pak, Inc., A&R Bulk-Pak, Inc.
Comment O-1-2	I strongly urge the state to maintain current freight service and the capacity for growth by selecting the base alternative.
Response	<p>Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As outlined above, this alternative would improve both passenger and freight rail capacity and operations. Improvement of passenger rail service, while maintaining freight operations along the Empire Corridor, is one of the goals for the HSR Empire Corridor Program. Minimizing interference with freight rail operations is one of the six performance objectives of the High Speed Rail Empire Corridor Program. The importance of preservation and the improvement of freight rail traffic to the economy of New York State has been a critical factor in the selection of the Preferred Alternative.</p>
Commenter	Allen, Linda, Advocates for Rensselaer Trails (ART), Advocates for Rensselaer Trails (ART)
Comment O-2-1	I strongly support improvements to the High Speed Rail Empire Corridor. I am supportive of alternatives 90B and 110.
Response	Your comment in support of the 90B and 110 Alternatives has been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. For reasons of

safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Because of the required property acquisition, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance.

Commenter Allen, Linda, Advocates for Rensselaer Trails (ART), Advocates for Rensselaer Trails (ART)

Comment 0-2-2 I would like to express one concern with respect to the alternatives outlined in the draft EIS, and that is the lack of a pedestrian walkway on the replacement Livingston Avenue Bridge, which is part of all alternatives except the base alternative. I realize that the draft EIS is only a high level Tier 1 review and a more detailed review will be conducted in the future of the selected alternative, but I strongly encourage the NYS DOT to include a pedestrian walkway in the project at this early stage of development.

In particular, the walkway would:

- Increase the travel choices and improve air quality by providing additional commuting and travel options for residents and workers,

- Contribute to the economic revitalization by linking the planned riverfront developments in both Rensselaer and Albany,

- Improve environmental quality by reducing reliance on automobile travel.

The project has the potential to not only improve one mode of transportation but also enhance the intermodal opportunities more generally. Moreover, bicycle transportation and pedestrian walkways are supported and encouraged under major transportation legislation, including the Intermodal Surface Transportation Efficiency Act and Transportation Equity Act for the 21st Century, so the NYS DOT clearly has a mandate to include a walkway on the Livingston Avenue Bridge

Response Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website <https://www.dot.ny.gov/livingstonavebridge>.

Commenter Allen, Linda

Comment 0-2-3 I support the improvements to the High Speed Rail Empire Corridor, which provides an alternative mode of transportation for New Yorkers, as well as others who travel through the state.

Overall, I think the draft EIS provides a good assessment of alternatives for improving inner-city passenger rail service in the State, and personally I'm supportive of Alternatives 90B and 110. I think those two alternatives provide notable improvements in rail service at a reasonable cost.

Response Thank you for your interest in the High Speed Rail Empire Corridor Program. The Tier 1 EIS evaluates a range of corridor-level service improvements for the purpose of making decisions on corridor-level service, including service reliability, service frequency, and train speeds. Individual projects, or groups of projects, will undergo a second evaluation (Tier 2) to determine the best alternative for that program, or group of projects including looking at options for pedestrian/bicycle accommodations. Comments from the public, relating to the High Speed Rail Empire Corridor Program, have been considered by FRA and NYSDOT in the selection process for a Preferred Alternative.

Commenter	Allen, Linda
Comment O-2-4	<p>However, I would like to voice one concern with respect to the alternatives outlined in the draft EIS, and that is the lack of a pedestrian walkway on the replacement Livingston Avenue Bridge, which is part of all of the build alternatives.</p> <p>...but I strongly encourage the DOT to include a pedestrian walkway in the project in this early stage of development, given that it is included in all the build alternatives.</p>
Response	<p>Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website https://www.dot.ny.gov/livingstonavebridge.</p>
Commenter	Worden, Lorenz M., President, Albany Bicycle Coalition, Albany Bicycle Coalition
Comment O-3-1	<p>The planned rebuilding of Albany's Livingston Avenue Railroad Bridge presents a one-time, unique opportunity to provide a pedestrian and bicycle link between both sides of the Hudson River.</p> <p>One can easily envision both recreational and commuter bicyclists using the link to decrease traffic congestion, promote tourism, reduce pollution, and increase health. The cost of this minor augmentation to the bridge will be minimal with the project's scope. By contrast, its impact on economic development, recreation, and environmental quality, will be great and lasting. Local governing bodies and planning commissions have fully endorsed this project, as has Senator Schumer.</p>
Response	<p>Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website https://www.dot.ny.gov/livingstonavebridge.</p>
Commenter	Worden, Lorenz M., President, Albany Bicycle Coalition, Albany Bicycle Coalition
Comment O-3-2	<p>We in the Albany Bicycle Coalition, on behalf of pedestrians and cyclists in the Capital Region, are asking your support for one small but key provision: restoration of a walkway/bikeway on the new bridge.</p>
Response	<p>Thank you for your comments on the Livingston Avenue Bridge. The Tier 1 FEIS document notes the support for the pedestrian walkway and bicycle path on the bridge.</p>
Commenter	Worden, Lorenz M., President, Albany Bicycle Coalition, Albany Bicycle Coalition
Comment O-3-3	<p>What rail travel needs in NYS is the following:</p> <ul style="list-style-type: none"> • On time departure and on time arrival • No wrecks • Reasonable cost <p>After Amtrak has achieved the above real needs, then will be the time to concern yourselves with speed.</p>
Response	<p>Thank you for your comments on the needs for improving intercity rail passenger service on the Empire Corridor. The High Speed Rail Empire Corridor Tier 1 EIS evaluates a range of corridor-level service improvements for the purpose of making decisions on corridor-</p>

	level service, including service reliability, service frequency, and train speeds, which will meet the goals that outlined in your comment.
Commenter	Healy, Edward B., Alliance Shippers, Inc., Alliance Shippers, Inc.
Comment O-4-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail. Specifically in the Tier 1 EIS, Chapters 3 and 4 discuss the positive impacts of the program, with Section 4.3 Regional Population and Employment, and Business Districts, discussing how the program will create employment opportunities and support the labor markets in the regions served by the improved rail service. The importance of preserving and improving freight rail traffic to the economy of New York State has been an important factor in the selection of a Preferred Alternative.
Commenter	Healy, Edward B., Alliance Shippers, Inc., Alliance Shippers, Inc.
Comment O-4-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations. Compromised or limited service on the current freight network may force my company to alter our business operations and begin shipping more products by truck – increasing cost, increasing our environmental footprint and increasing traffic on New York roadways. I urge the state to maintain current freight service and the capacity for growth by selecting the base alternative. An optimized freight rail network will foster economic development, sustain jobs and help job growth as well as position existing and future New York businesses for success.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As outlined above, this alternative would improve both passenger and freight rail capacity and operations. Improvement of passenger rail service, while maintaining freight operations along the Empire Corridor, is one of the goals for the HSR Empire Corridor Program. Minimizing interference with freight rail operations is one of the six performance objectives of the High Speed Rail Empire Corridor Program. The importance of preservation and the improvement of freight rail traffic to the economy of New York State has been a critical factor in the selection of the Preferred Alternative.
Commenter	Lefcourt, Ronald, Alliance Shippers, Inc., Alliance Shippers, Inc.
Comment O-4-3	Alliance Shippers Inc., a universal transportation company, has many services. In the year 2013 one major division of our company moved in excess of 50,000 trailer loads requiring temperature control throughout the United States of America. The majority of those truckload shipments are fresh produce from the states of Washington, Oregon, California and Arizona. We probably handle about 100 trailer loads of produce per week into the New York City area. We use CSX Transportation for the majority of those trailer loads. CSX receives our trailers at a Chicago Interchange point and then transports these trailer loads of fresh produce into their North Bergen NJ intermodal terminal. From there our delivery agents complete the process by delivering to customers in the Bronx Terminal Market, Queens and Brooklyn, NY.

Any slowdown in CSX service for fresh produce could change the customer's mode of transportation from railroad intermodal to highway trucks. The result of this would be emitting considerably more hydrocarbons into our atmosphere. Our company also ships thousands of loads of various commodities in and out of the New York Metropolitan area. The impact on this business could also be affected to some degree.

Response Thank you for your comment discussing the importance of shipping by rail, which has been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. The High Speed Rail Empire Corridor Program is committed to improving rail service in New York State for both freight and passenger trains, and this will also benefit the many shippers and users of rail service along this important corridor.

Commenter Norton, Scott, AMERICAN Cast Iron Pipe Company, AMERICAN Cast Iron Pipe Company

Comment O-5-1 I am concerned that the proposed high speed rail corridor would negatively affect business operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail. Specifically in the Tier 1 EIS, Chapters 3 and 4 discuss the positive impacts of the program, with Section 4.3 Regional Population and Employment, and Business Districts, discussing how the program will create employment opportunities and support the labor markets in the regions served by the improved rail service. The importance of preserving and improving freight rail traffic to the economy of New York State has been an important factor in the selection of a Preferred Alternative.

Commenter Norton, Scott, AMERICAN Cast Iron Pipe Company, AMERICAN Cast Iron Pipe Company

Comment O-5-2 I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations. Compromised or limited service on the current freight network could force my company to alter our business operations and begin shipping more products by truck – increasing cost, increasing our environmental footprint and increasing traffic on New York roadways.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight traffic and will reduce travel times between New York City and Niagara Falls by 1½ hours in 2035, compared to the Base Alternative. Alternative 90B would also involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter Goldrick, Joseph, AMG Resources, AMG Resources

Comment O-6-1 I am concerned that the proposed high speed rail corridor would negatively affect business operations. Compromised or limited service on the current freight network may force my company to alter our business operations at increase cost for the alternatives.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail.

Commenter Goldrick, Joseph, AMG Resources, AMG Resources

Comment I urge the state to maintain current freight service and the capacity for growth.
O-6-2

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter Fredericksen, Scott, President Transportation, Archer Daniels Midland, Archer Daniels Midland

Comment I urge the state to consider the impact on freight rail operations when selecting a high speed passenger rail alternative.
O-7-1
In recent years we have shipped many thousands of railcars annually to the state. These shipments are accompanied by multi-million dollar freight bills each year. Fast, predictable and consistent transit times are critical to our business. If these criteria deteriorate our shipments to the state will decrease significantly. Our customers would find non-rail transportation solutions or even shift volume to alternative markets to meet their demand

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail.

Commenter Fredericksen, Scott, President Transportation, Archer Daniels Midland, Archer Daniels Midland

Comment In selecting an option, I encourage the state to maintain freight connectivity and the capacity to expand such service in the future. Advancing high speed passenger rail at the detriment of freight rail would limit opportunities for business and job growth and would be detrimental to the state economy.
O-7-2

Response Thank you for your comments discussing the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight traffic and will reduce travel times between New York City and Niagara Falls by 1½ hours in 2035, compared to the Base Alternative. Alternative 90B would also involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter	Sage, Samuel H., President, Atlantic States Legal Foundation, Inc., Atlantic States Legal Foundation, Inc.
Comment O-8-1	Further, ASLF would suggest that DOT further generate and support for this project.
Response	Thank you for your comment, and support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Sage, Samuel H., President, Atlantic States Legal Foundation, Inc., Atlantic States Legal Foundation, Inc.
Comment O-8-2	The 110mph option stands out from the others as the most desirable due to its feasibility and environmental outcomes.
Response	Your comment in support of the 110 Alternative has been considered by the FRA and NYSDOT in the selection process for a Preferred Alternative. Because of the required property acquisition, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance. For these reasons, this alternative was dismissed from further consideration. Thank you for participating in the public review of the Tier 1 EIS for the High Speed Rail Empire Corridor Program.
Commenter	Sage, Samuel H., President, Atlantic States Legal Foundation, Inc., Atlantic States Legal Foundation, Inc.
Comment O-8-3	Passenger usage should be recalculated after considering connecting buses and potentially local train service to provide connecting trains at major station stops. California is doing this and coordinating other modes of travel with train service
Response	Thank you for your comments on improving connectivity between different modes of transportation with rail passenger service, which has been considered in the development of the Service Development Plan. Individual projects, or groups of projects, will be advanced according to the Service Development Plan in Tier 2 environmental evaluations and design development. For station projects, opportunities for multimodal connectivity will be pursued with the local municipality and transit provider.
Commenter	Sage, Samuel H., President, Atlantic States Legal Foundation, Inc., Atlantic States Legal Foundation, Inc.
Comment O-8-4	Major increase in the timetable would result from eliminating the need for switching engines in Albany. The cost of this would be modest in relation to gain in time.
Response	Thank you for your comments on the timetable. The Tier 1 EIS and the Service Development Plan have considered the operations at the Albany-Rensselaer Rail Station as part of the identification of the Preferred Alternative. More detailed evaluation of timetables and station operations would be performed as part of Tier 2 assessments.
Commenter	Sage, Samuel H., President, Atlantic States Legal Foundation, Inc., Atlantic States Legal Foundation, Inc.
Comment O-8-5	Deficiencies in EIS: The analysis must be integrated with discussion options for new rolling stock. Higher performance rolling stock is needed. New Siemens 125mph locomotives modified for third rail pickup would be one alternative. Adopting them for third rail is not technologically difficult or too costly. Higher performance engines and cars will save money on fuel, maintenance, etc. Tilt body trains such as those tested in the late 80's on the Northeast corridor would allow increased travel speeds

Response	Thank you for your comments discussing different types of locomotives that could be utilized on the route. Identification and selection of the locomotives to be used on the route will be developed further as the FRA and NYSDOT refine the Preferred Alternative in Tier 2 assessments.
Commenter	Sage, Samuel H., President, Atlantic States Legal Foundation, Inc., Atlantic States Legal Foundation, Inc.
Comment O-8-6	There is a need for better distribution and dissemination of the draft EIA. Paper copies should be put into more document depositories – our office library is one such that could be used. You should also supply copies on CD's for interested parties
Response	<p>Thank you for your suggestions on the distribution and availability of the High Speed Rail Empire Corridor Program documents and materials. All the information for the public hearings was (is) available at: https://www.dot.ny.gov/empire-corridor</p> <p>The four volumes of the of the Tier 1 DEIS were and still are available online at: https://www.dot.ny.gov/empire-corridor/deis</p> <p>Copies of all the materials for the High Speed Rail Empire Corridor Program were available by contacting the program staff for both printed or compact disc materials or directly from the program website. Moving forward with the program, the website and other supporting materials will be updated, as appropriate, and available to the public.</p>
Commenter	Price, George, Berg Steel Pipe, Berg Steel Pipe
Comment O-9-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	<p>Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail. Specifically in the Tier 1 EIS, Chapters 3 and 4 discuss the positive impacts of the program, with Section 4.3 Regional Population and Employment, and Business Districts, discussing how the program will create employment opportunities and support the labor markets in the regions served by the improved rail service. The importance of preserving and improving freight rail traffic to the economy of New York State has been an important factor in the selection of a Preferred Alternative.</p>
Commenter	Price, George, Berg Steel Pipe, Berg Steel Pipe
Comment O-9-2	<p>I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.</p> <p>I urge the state to maintain current freight service and the capacity for growth by selecting the base alternative. An optimized freight rail network will foster economic development, sustain jobs and help job growth as well as position existing and future New York businesses for success.</p>
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight

	rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Price, George, Berg Steel Pipe, Berg Steel Pipe
Comment O-9-3	Comprised or limited service on the current freight network will have a negative effect on my business, increasing the cost of doing business in New York.
Response	Thank you for your comments discussing the High Speed Rail Empire Corridor Program. As outlined above, the Preferred Alternative would improve both passenger and freight rail capacity and operations along the Empire Corridor, which would benefit both freight shippers and passengers.
Commenter	Locke, Steve, BSPS Trustee President, Bergen Swamp Preservation Society, Bergen Swamp Preservation Society
Comment O-10-1	On behalf of the trustees of the Bergen Swamp Preservation Society (BSPS) I am asking that the BSPS be included as a party of interest for the High Speed Rail Corridor Program. We ask that you forward all present and future notifications regarding this program. The BSPS is the first and oldest private ecological preservation land trust in the United States. We are chartered by the New York State Department of Education as a "Living Museum". We have a membership of 400 persons / corporations and we oversee five separate properties located throughout upstate New York, The Bergen Swamp was this nations first designated National Natural Landmark.
Response	Thank you for your comments and your interest in High Speed Rail Empire Corridor Program. The Bergen Swamp Preservation Society (BSPS) will be included as a party of interest for the New York State High Speed Rail program, and NYSDOT and the FRA recognize the importance of protecting the preserve as a National Natural Landmark.
Commenter	Locke, Steve, BSPS Trustee President, Bergen Swamp Preservation Society, Bergen Swamp Preservation Society
Comment O-10-2	Our Society and our membership strongly oppose any alternative plan that would deviate the rail lines from the present rail corridor through Genesee County. This corridor is owned by New York Central Lines LLC. We specifically ask that all rail lines stay within current New York Central Lines LLC properties identified by Town of Bergen SWIS code & Tax map parcel numbers 18268913.-1-53, 1826012.-1-42, 1826011.-1-59, 1826011.-1-56, 18268915.-1-26 and Town of Byron SWIS code & Tax map parcel numbers 18300010.-1-28 and 18300009.-1-59. Some of your proposals describe the construction of a new rail corridor that deviates several miles north of the present rail corridor. This new "northern" rail line would be constructed along Warboys Rd. through the Town of Bergen & Byron. This would be along our Bergen Swamp northern border. Any proposed new construction that would direct a high speed rail corridor along the borders of the Bergen Swamp, this nations first and most prestigious ecological sanctuary, is a train off the tracks.
Response	Thank you for your comments discussing the proposed alignment of the 125 alternative, and the importance of protecting the Bergen Swamp Preserve is recognized by the FRA and NYSDOT. The 125 Alternative was the conceptual alignment for the purposes of the Tier 1 assessment, and this alternative has been dismissed from further consideration.
Commenter	Bhandari, Amit, BioUrja Trading, LLC, BioUrja Trading, LLC
Comment O-11-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations. Compromised or limited service on the current freight network may force my company to alter our business operations and begin shipping more products by truck – increasing cost, increasing our environmental footprint and increasing traffic on New York roadways.

Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail. Alternative 90B would also involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Bhandari, Amit, BioUrja Trading, LLC, BioUrja Trading, LLC
Comment O-11-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thanks for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As outlined above, this alternative would improve both passenger and freight rail capacity and operations.
Commenter	Batchelor, Gary, BlueLinx Corporation, BlueLinx Corporation
Comment O-12-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations. BlueLinx Corporation, a leading distributor of building products, has many warehouses which will be negatively impacted by the high speed rail corridor. We rely on constant rail service everyday to meet customer commitments and remain cost competitive in this market. The lack of reliable rail freight service will result in increased costs, lost sales, negative growth opportunities. Compromised or limited service on the current freight network may force my company to alter our business operations and begin shipping more products by truck – increasing cost, increasing our environmental footprint and increasing traffic on New York roadways.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail.
Commenter	Batchelor, Gary, BlueLinx Corporation, BlueLinx Corporation
Comment O-12-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter	Lund, Gregory W., Secretary/Treasurer Conrail/SAA/Alternate Legislative Representative, Brotherhood of Locomotive Engineers and Trainmen, CSX North General Committee of Adjustment, Brotherhood of Locomotive Engineers and Trainmen, CSX North General Committee of Adjustment
Comment O-13-1	I am a rep for the Brotherhood of Locomotive Engineers and Trainmen. I am currently a locomotive engineer in the Buffalo-Albany corridor, any plan such as 90A or 90B is really going to have to increase the overall capacity not only as far as the passenger side but also on the freight side. I say this because freight business within New York State and the lines that we travel over currently has probably increased in the last five years by 50 trains per week which would amount to seven trains per day and that does not leave you a lot of slots, a lot of slotting for passenger and/or freight. Freight is only going to increase as we go along. With that, separation is what we need because it does little good to a 90 or 110 mile an hour passenger train to get stuck behind a 50 or 60 mile an hour freight train.
Response	Thank you for your comments on of freight and passenger train operations on the Empire Corridor. Your assessment of the freight and passenger trains points to the need for improvements along the route. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail. The FRA and NYSDOT are committed to improving both freight and passenger service, and the operation of passenger and freight trains along the Empire Corridor was a major factor in the selection of the Preferred Alternative.
Commenter	Kearnsing, David, Brotherhood of Locomotive Engineers and Trainmen, Brotherhood of Locomotive Engineers and Trainmen
Comment O-13-2	My name is David Kearnsing. I am with the Brotherhood of Local Engineers and Trainmen. I work for CSX. I heard some concerns about oil trains, safety on the rails and everything else. In 2013, railroads across the United States have had their safest year ever in personal on the job, as well as crossings and incidents on the rails themselves. Regarding the oil trains, the number of carloads that we have, have increased to over 400,000 carloads over the past five years...
Response	Thank you for your comments on the operation of trains along the Empire Corridor. The Preferred Alternative (Alternative 90B) identified by FRA and NYSDOT will improve safety by better segregating passenger and freight traffic and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. The Tier 1 EIS examined the operation of passenger and freight trains along the Empire Corridor, with critical focus on promoting both safe operations and allowing for expanded capacity to promote growth of rail traffic.
Commenter	Kearnsing, David, Brotherhood of Locomotive Engineers and Trainmen, Brotherhood of Locomotive Engineers and Trainmen
Comment O-13-3	High speed rail as we want it, the environmental impact would be tremendous. The visual would be ugly. It involves catenary lines that would interfere with the views of the rivers along the Mohawk, along the Hudson River. Higher speed rail and me running the trains, I propose and support the 110 or the 90B.
Response	Thank you for your comments on the different alternatives, which were considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.
Commenter	McDermott, Terrence, Bunge North America, Bunge North America
Comment O-14-1	Bunge North America urges the state to consider the impact on freight rail operations when selecting an alternative.

Bunge North America ships grain products across the Empire Corridor rail line in New York from our processing and milling plants in the United States and Canada. This rail line provides the most cost-effective route over the long distances required to our customers in New York. It is critical for our businesses to maintain an efficient and consistent flow of our product and private rail cars to and from New York.

If service on the current freight network were compromised by the operation of high speed passenger rail, we could be forced to alter our business operations and possibly reduce shipping rail to customers in New York.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail. Specifically in the Tier 1 EIS, Chapters 3 and 4 discuss the positive impacts of the program, with Section 4.3 Regional Population and Employment, and Business Districts, discussing how the program will create employment opportunities and support the labor markets in the regions served by the improved rail service. The importance of preserving and improving freight rail traffic to the economy of New York State has been an important factor in the selection of the Preferred Alternative.

Commenter **McDermott, Terrence, Bunge North America, Bunge North America**

Comment O-14-2 In selecting an option, we encourage the state to maintain freight connectivity and the capacity to expand such service in the future.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter **Klein, Mark, Cargill, Cargill**

Comment O-15-1 We are writing to express our opposition to the mixing of passenger and freight traffic on the CSX line between Albany and Buffalo.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail.

Commenter **Klein, Mark, Cargill, Cargill**

Comment O-15-2 Albany is an important destination for agricultural products to move from the interior of the United States to markets in the east and for export through the Port of Albany. Our experience elsewhere shows that when we have passenger trains running past our facilities, we have seen a reduction in service. The passenger trains take precedence and switching trains into our facilities is curtailed. If the Buffalo-Albany corridor was high speed, we think the challenges would be even greater than what we have seen elsewhere.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor

Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. Improvement of passenger rail service, while maintaining freight operations along the Empire Corridor, is one of the goals for the HSR Empire Corridor Program. Minimizing interference with freight rail operations is one of the six performance objectives of the High Speed Rail Empire Corridor Program. The importance of preservation and the improvement of freight rail traffic to the economy of New York State has been a critical factor in the selection of a Preferred Alternative.

Commenter **Drown, Matthew, Caterpillar, Caterpillar**

Comment O-16-1 I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Compromised or limited service on the current freight network may force my company to alter our business operations and begin shipping more products by truck – increasing cost, increasing our environmental footprint and increasing traffic on New York roadways.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail. Specifically in the Tier 1 EIS, Chapters 3 and 4 discuss the positive impacts of the program, with Section 4.3 Regional Population and Employment, and Business Districts, discussing how the program will create employment opportunities and support the labor markets in the regions served by the improved rail service. The importance of preserving and improving freight rail traffic to the economy of New York State has been an important factor in the selection of the Preferred Alternative.

Commenter **Drown, Matthew, Caterpillar, Caterpillar**

Comment O-16-2 I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. Improvement of passenger rail service, while maintaining freight operations along the Empire Corridor, is one of the goals for the HSR Empire Corridor Program. Minimizing interference with freight rail operations is one of the six performance objectives of the High Speed Rail Empire Corridor Program. The importance of preservation and the improvement of freight rail traffic to the economy of New York State has been a critical factor in the selection of the Preferred Alternative.

Commenter **Warner, Deborah S., Vice President for Public Policy and Government Relations, Center State Corporation for Economic Opportunity (CEG), Center State Corporation for Economic Opportunity (CEG)**

Comment O-17-1 In reviewing the study of the five alternatives, we note that there are positive results from any increased investment. However, we also are keenly aware that significant federal

resources would be needed for any but the Base Alternative to move forward. This is the major hurdle in the short term. One can hope that future funding would become available to enable New York State to move ahead with incremental, prioritized improvements in keeping with the DEIS findings.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in selecting Alternative 90B as the Preferred Alternative. Alternative 90B would involve substantially fewer right-of-way and environmental impacts than Alternatives 110 and 125 and would also be substantially less costly. Thank you for your support for the program and comments on prioritizing the improvements.

Commenter **Warner, Deborah S., Vice President for Public Policy and Government Relations, Center State Corporation for Economic Opportunity (CEG), Center State Corporation for Economic Opportunity (CEG)**

Comment O-17-2 It would be logical to reject the Base (No Action) Alternative because it brings no improvements beyond what is already approved and funded by the FRA.

Response Thank you for your comments on the alternatives in the Tier 1 DEIS. Your comment on rejecting the Base Alternative is noted and has been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight traffic and will reduce travel times between New York City and Niagara Falls by 1 ½ hours in 2035, compared to the Base Alternative.

Commenter **Warner, Deborah S., Vice President for Public Policy and Government Relations, Center State Corporation for Economic Opportunity (CEG), Center State Corporation for Economic Opportunity (CEG)**

Comment O-17-3 Alternative 125 is less preferable due to its high cost at nearly \$15 billion to build which generates the highest per rider cost of any of the alternatives.

Response Thank you for your comments on the cost of Alternative 125. Alternative 125 has been dismissed from further consideration in part based on its costs, it is the costliest alternative.

Commenter **Warner, Deborah S., Vice President for Public Policy and Government Relations, Center State Corporation for Economic Opportunity (CEG), Center State Corporation for Economic Opportunity (CEG)**

Comment O-17-4 Our interests are strongest for investments that improve the east-west corridor from Niagara Falls to Albany, as it has not benefitted as much from previous improvements as the Empire Corridor South between Albany and New York City. The Southern Corridor already runs a better schedule, more on time trips, having already been the beneficiary of more improvements than the Empire Corridor West. The current on time passenger train performance west of Albany of only 56 to 57 percent clearly must be addressed.

Response Thank you for your comments on the Tier 1 DEIS comparing the Empire Corridor south and west of Albany. In the Preferred Alternative, Alternative 90B, the number of trains serving the western portion of the Empire Corridor will increase, and there will be a reduction in trip time. In addition, the Preferred Alternative would have the best overall on-time performance of the alternatives considered. Unlike the 125 express service, which would bypass existing stations at Schenectady, Amsterdam, Rome, Utica, and Buffalo-Depew, it will improve service to these existing stations. Your comments have been considered by the FRA and NYSDOT in the selection process for the Preferred Alternative.

Commenter	Warner, Deborah S., Vice President for Public Policy and Government Relations, Center State Corporation for Economic Opportunity (CEG), Center State Corporation for Economic Opportunity (CEG)
Comment O-17-5	<p>It is clear from the DEIS that Alternative 110, costing \$6.25 billion and including new third and fourth main tracks, provides several distinct advantages. The one drawback of this alternative is that, while it would increase daily round trips, it would not offer express service.</p> <p>Improved rail infrastructure also increase the speed and capacity of our freight rail system, which benefits Upstate businesses and the entire northeast U.S. In the Buffalo-Niagara area alone, over 200 businesses depend heavily on rail for delivery and shipment of goods and products. These companies employ over 27,000 worker and have annual sales of over \$7.2 billion.</p> <p>The Impact Assessment states that around 3,500 worker are employed by 30 companies that manufacture railroad equipment in New York State. While these companies, with sales in excess of \$750 million, provide goods and services directly to the rail industry, an additional 11,000 Upstate workers are employed by businesses that produce and distribute goods to sectors that are heavily relied upon by the railroad rolling stock industry. New order of these businesses "represent a bright spot in the future of manufacturing and distribution in Upstate New York".</p> <p>The cities and regions along the Empire and Montreal Corridors each have world-class academic institutions, which would benefit from improvements, but could also provide invaluable assistance in the development and implementation of higher speed rail in New York State.</p> <p>With in just the 12-county Central Upstate region, 35 colleges and universities educate more than 130,000 students, the third highest concentration of college students in the entire country.</p> <p>New York's tourism economy will grow by fostering international trade and travel at border crossings with Canada, provide a reasonably priced, accessible and efficient alternative to air transportation, and speed up municipality-sponsored Amtrak station investments. Upstate New York's tourism industry, over \$12 billion of our economy, will be directly impacted by increased connectivity and ease of travel. All of Upstate's regions will be able to directly tap into the tourism markets of New York City, one of the most visited tourist destinations in the world.</p>
Response	<p>Thank you for your comments on the Tier 1 DEIS. The purpose of the High Speed Rail Empire Corridor Program is to introduce higher passenger train speeds on the Empire Corridor and to improve reliability, travel times, levels of train service and passenger amenities.</p> <p>Section ES-2.3 of the Tier 1 FEIS addresses program goals and objectives: "Improvements in service include tangible and measurable gains in operational reliability and travel time reductions of scheduled train trips; an increase in the frequency of train trips; and support of economic development, mobility and environmental sustainability goals." The Preferred Alternative, Alternative 90B, was selected based on its ability to provide these transportation and economic benefits, and improved access to businesses and institutions and other destinations should support continued economic development and tourism for the region.</p> <p>Thank you for your comments on Alternative 110 and the benefits of "Express Service." However, the "Express Service" option may not provide equal benefits to all of the riders on the route, and may leave some stations with less attractive service. The transportation operations, costs, and environmental impacts were considered as part of the the criteria used by the FRA and NYSDOT to select the Preferred Alternative. Because of the required property acquisition, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest</p>

	improvement in overall performance. For these reasons, this alternative was dismissed from further consideration.
Commenter	Rodgers, Marilyn, Executive Director/CEO, Center for Restoration Arts & Sciences, Central Terminal Restoration Corporation, Center for Restoration Arts & Sciences, Central Terminal Restoration Corporation
Comment O-18-1	The Central Terminal Restoration Corp. (CTRC), as steward of the National Landmark known as the Buffalo Central Terminal wishes to acknowledge and endorse the Buffalo Common Council's adopted resolution on March 11, 2014 (attached for your review) regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project – Tier I EIS.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station over the Central Terminal location. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.
Commenter	Rodgers, Marilyn, Executive Director/CEO, Center for Restoration Arts & Sciences, Central Terminal Restoration Corporation, Center for Restoration Arts & Sciences, Central Terminal Restoration Corporation
Comment O-18-2	<p>The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.</p> <ul style="list-style-type: none"> - The CTRC is currently working with various future tenants and funders for a major adaptive reuse project of the Terminal which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York - The Terminal is centrally located within a two-mile radius of city-center - The Terminal also has secure parking facilities for up to 450 vehicles - The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development - The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration <p>That the Common Council supports the amendment of the High Speed Rail Empire Corridor Program to include the revitalization of the New York Central Terminal on Memorial Drive as an Intermodal Train Station in the City of Buffalo</p>
Response	Thank you for your additional comment on the Buffalo Central Terminal, and it has been included in the documentation of comments from the public on the program. A notation has been added to the Tier 1 FEIS, noting the public support for this historic structure.
Commenter	Maurer, Paul D., Central Terminal Restoration Corporation, Central Terminal Restoration Corporation

Comment 0-18-3 I am a volunteer board member of the Buffalo Central Terminal Restoration Corporation. Our historic and beautiful train station nears it's 85th birthday this June It lies along current live tracks in an area that would make a natural link to Downtown Buffalo. The resurgent area, now dubbed "Larkinville", is just a scant mile away from our soaring building. We would be a perfect location for a high speed rail station, with 500,000 square feet of space that would make for a breathtaking "front entrance" to Buffalo. Please consider this site as a viable replacement for the Amtrak Depew and Exchange stations.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment 0-18-1.

Commenter Cox, Tim, Certainteed Gypsum, Inc., Certainteed Gypsum, Inc.

Comment 0-19-1 we are concerned that the proposed high speed rail corridor would negatively affect business operations. Again, our ability to continue providing our customers with efficient, lower cost, reliable rail transportation is key to our success as well as the success of our customers. We urge you to consider the effects this will have on all rail shippers who greatly depend on rail service to meet demand in the NY and surrounding markets.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail. Specifically in the Tier 1 EIS, Chapters 3 and 4 discuss the positive impacts of the program, with Section 4.3 Regional Population and Employment, and Business Districts, discussing how the program will create employment opportunities and support the labor markets in the regions served by the improved rail service. The importance of preserving and improving freight rail traffic to the economy of New York State has been an important factor in the selection of a Preferred Alternative.

Commenter Cox, Tim, Certainteed Gypsum, Inc., Certainteed Gypsum, Inc.

Comment 0-19-2 We encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations. They also would impede the ability of the freight rail network to keep pace with and serve the needs of a growing upstate economy.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. Improvement of passenger rail service, while maintaining freight operations along the Empire Corridor, is one of the goals for the HSR Empire Corridor Program. Minimizing interference with freight rail operations is one of the six performance objectives of the High Speed Rail Empire Corridor Program. The importance of preservation and the improvement of freight rail traffic to the economy of New York State has been a critical factor in the selection of a Preferred Alternative.

Commenter	Funke, Douglas J., President, Citizens for Regional Transit, Citizens for Regional Transit
Comment O-20-1	Citizens for Regional Transit (CRT) strongly supports high-speed passenger rail in NYS
Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Funke, Douglas J., President, Citizens for Regional Transit, Citizens for Regional Transit
Comment O-20-2	CRT urges that the alternatives should include significant improvements to the two Amtrak stations in Buffalo The current Depew Station does not adequately serve city residents and the current Exchange Street Station cannot handle westbound trains. A new train station within the city of Buffalo is needed. The future downtown Buffalo station serving HSR should offer seamless integration with local public transit, especially the light rail system. The Depew station is inadequate for current passenger access and for future HSR. A better location is the historic Central Terminal.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Improvement to the passenger rail facilities in the City of Buffalo area is an important goal of the High Speed Rail Empire Corridor Program. NYSDOT has implemented upgrades at the existing rail station at Buffalo-Depew to improve/rehabilitate the parking lot and enhance passenger access to comply with Americans with Disabilities Act requirements. The focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. Buffalo Central Terminal was not included in the Build Alternatives in the Tier 1 EIS. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station over the Central Terminal location. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.
Commenter	Funke, Douglas J., President, Citizens for Regional Transit, Citizens for Regional Transit
Comment O-20-3	Second, along with providing a reliable connection between Buffalo and Niagara Falls, high-speed rail should offer continuing service to Toronto.
Response	Thank you for your comment that points out the opportunities on the western end of the Empire Corridor with connections in Canada. The program will improve service that operates along Empire Corridor, including Maple Leaf service that continues into Toronto.
Commenter	Funke, Douglas J., President, Citizens for Regional Transit, Citizens for Regional Transit
Comment O-20-4	My name is Doug Funke. I am the president of Citizens for Regional Transit. It looked like there wasn't a lot of resources being applied to a new train station for the options that were not the 125-mile an hour option, and we feel that the train stations here

in Buffalo are pretty dysfunctional and need some significant improvement. We need new stations no matter what option, so we would support that.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the need for a new station in Buffalo, New York. Recent station upgrades include state-of-good-repair and accessibility improvements at the Buffalo-Depew Station in 2013 and completion of a new Buffalo-Exchange Street Station in 2020.

Commenter **Funke, Douglas J., President, Citizens for Regional Transit, Citizens for Regional Transit**

Comment O-20-5 As far as which option, I would agree with Mayor Dyster that the 125 would be the best but we recognize that we have the same budget and schedule and we want to get something done. We want to see something get done as quickly as possible.

Response Thank you for your comment supporting the 125 Alternative. The Preferred Alternative, Alternative 90B, was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. Because it is situated largely within the existing right-of-way, it can be constructed in substantially less time than Alternative 125 and will begin to confer benefits within 2 to 5 years after start of construction. Unlike the 125 express service, which would bypass existing stations at Schenectady, Amsterdam, Rome, Utica, and Buffalo-Depew, it will improve service to these existing stations.

Commenter **Funke, Douglas J., President, Citizens for Regional Transit, Citizens for Regional Transit**

Comment O-20-6 Finally, the most important point is whatever is developed in terms of high speed rail, it needs to get with local transportation, local transit, preferably with a light-rail system so a new station needs to be able to also integrate and accommodate our light-rail system preferably.

Response Thank you for your comments on the Tier 1 DEIS and your support. The purpose of the High Speed Rail Empire Corridor Program is to introduce higher passenger train speeds on the Empire Corridor and to improve reliability, travel times, levels of train service and passenger amenities, along the Empire Corridor between New York City and Niagara Falls. Opportunities for connecting to other transit systems will need to be part of future efforts of the communities and stakeholders along the route.

Commenter **Wilson, Don, CMC Commercial Metals, CMC Commercial Metals**

Comment O-21-1 As a company in Columbia, SC that manufactures steel products and ships approximately 150 railcars annually into New York (primarily Brooklyn), we rely on the existing freight rail network for the efficient, reliable and economical transportation of goods. Compromised or limited service on the current freight network may force my company to alter our business operations and begin shipping more products by truck – increasing cost, increasing our environmental footprint and increasing traffic on New York roadways.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail. Specifically in the Tier

1 EIS, Chapters 3 and 4 discuss the positive impacts of the program, with Section 4.3 Regional Population and Employment, and Business Districts, discussing how the program will create employment opportunities and support the labor markets in the regions served by the improved rail service. The importance of preserving and improving freight rail traffic to the economy of New York State has been an important factor in the selection of a Preferred Alternative.

Commenter **Wilson, Don, CMC Commercial Metals, CMC Commercial Metals**

Comment
O-21-2 I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. Improvement of passenger rail service, while maintaining freight operations along the Empire Corridor, is one of the goals for the HSR Empire Corridor Program. Minimizing interference with freight rail operations is one of the six performance objectives of the High Speed Rail Empire Corridor Program. The importance of preservation and the improvement of freight rail traffic to the economy of New York State has been a critical factor in the selection of a Preferred Alternative.

Commenter **Piazza, David, Community Suffolk Inc., Community Suffolk Inc.**

Comment
O-22-1 Community-Suffolk, inc. is a family owned wholesale produce company that has been in business for three generations. Our business deals with perishable items that rely on freight rail to deliver products fresh to our customers. If this goes into affect the CSX freight rail network would be significantly delayed resulting in delinquent, compromised product to our facility. Fresh produce is prone to acteria and breakdown if not delivered in a timely fashion. This practice would cause an increase to our costs of having to find other ways of transport which would result in higher costs passed along to our customers. In today's economy, people just can not afford higher prices.
Compromised service on the current freight network, resulting from the operation of high speed passenger rail, may force my company to alter our business operations and begin shipping more products by truck – increasing cost, increasing our environmental footprint and increasing traffic on New York roadways.
I urge the state to consider the impact on freight rail operations when selecting an alternative.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail.

Commenter **Piazza, David, Community Suffolk Inc., Community Suffolk Inc.**

Comment
O-22-2 In selecting an option, I encourage the state to maintain freight connectivity and the capacity to expand such service in the future by not commingling freight and high speed rail operations.

Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As outlined above, this alternative would provide additional trackage and would improve both passenger and freight rail capacity and operations.
Commenter	Ali, Syd, Cornerstone Chemical Co., Cornerstone Chemical Co.
Comment O-23-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations. Compromised or limited service on the current freight network may force my company to alter our business operations and begin shipping more products by truck – increasing cost, increasing our environmental footprint and increasing traffic on New York roadways.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail. Specifically in the Tier 1 EIS, Chapters 3 and 4 discuss the positive impacts of the program, with Section 4.3 Regional Population and Employment, and Business Districts, discussing how the program will create employment opportunities and support the labor markets in the regions served by the improved rail service. The long-term impact of the Preferred Alternative on energy and greenhouse gas emissions will be positive, by reducing automotive trips. .
Commenter	Ali, Syd, Cornerstone Chemical Co., Cornerstone Chemical Co.
Comment O-23-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Clay, Timothy, Cornerstone Systems, Cornerstone Systems
Comment O-24-1	I do have concerns that the proposed high speed rail corridor would negatively affect business operations. Cornerstone Systems, Inc. moves over 8,000 intermodal and boxcar shipments annually into the New York area. Our volumes are growing approximately six percent per year because of the consistent and reliable service provided by the railroads. The potential for slower service would negatively impact our business resulting in more trucks on the highway and more carbon in the environment.
Response	Thank you for your comment on the HSR Empire Corridor Program. The Preferred Alternative will provide additional trackage (approximately 370 miles) to improve freight and passenger railroad operations on the Empire Corridor, and your comment has been considered in the selection process for the Preferred Alternative.
Commenter	Clay, Timothy, Cornerstone Systems, Cornerstone Systems

Comment O-24-2 I support the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, which I believe would significantly constrain current freight rail operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail.

Commenter Dorlon, Daniel, Covanta, Covanta

Comment O-25-1 As a company with significant Energy-from-Waste (EfW) operations in New York and a long-term contract with the City of New York to transport and dispose of residential waste generated in Manhattan and Queens, I appreciate the state's continued focus on economic development and pro-business efforts, but I am concerned that the proposed high speed rail corridor would negatively affect our business operations and the City of New York's plan for reducing the impact of waste transportation on the communities that it's waste travels through by truck

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail. Specifically in the Tier 1 EIS, Chapters 3 and 4 discuss the positive impacts of the program, with Section 4.3 Regional Population and Employment, and Business Districts, discussing how the program will create employment opportunities and support the labor markets in the regions served by the improved rail service. The importance of preserving and improving freight rail traffic to the economy of New York State has been an important factor in the selection of a Preferred Alternative.

Commenter Dorlon, Daniel, Covanta, Covanta

Comment O-25-2 I strongly encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter Nixon, Robert F., President, Diversity Matters 2 US, Diversity Matters 2 US

Comment O-26-1 In order to maximize opportunities for small minority- and woman-owned disadvantaged businesses, separate DBE/MBE/WBE goals should be assigned to the construction of the track, stations, wayside equipment and railcars. Stakeholders in determining the number of "ready, willing and able" DBEs should include prime contractors, major system suppliers, and Bes/MBEs/WBEs.

Since minorities and women represent a majority of the ridership, they must represent a significant proportion of the supplier base.

Response Thank you for your comments on the program. The High Speed Rail Empire Corridor Program has been meeting the goals, and is committed to the participation by Woman Business Enterprises (WBE) and Disadvantaged Business Enterprises (DBE), as required by New York State government. The program is compliant with New York State Department of Transportation goals for Disadvantaged Business Enterprises.

Commenter Nixon, Robert F., President, Diversity Matters 2 US, Diversity Matters 2 US

Comment 0-26-2 I think if you want to sell this to the voters on the western corridor, it's 125 or bust, because I think the incentive really has to be High Speed Rail. Some of the other alternatives just increases the speed a little bit.

Response Thank you for your support of the 125 Alternative. The Preferred Alternative, Alternative 90B, was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. Because it is situated largely within the existing right-of-way, it can be constructed in substantially less time than Alternative 125 and will begin to confer benefits within 2 to 5 years after start of construction. Unlike the 125 express service, which would bypass existing stations at Schenectady, Amsterdam, Rome, Utica, and Buffalo-Depew, it will improve service to these existing stations.

Commenter Nixon, Robert F., President, Diversity Matters 2 US, Diversity Matters 2 US

Comment 0-26-3 After this first phase is approved -- and it will be approved in my opinion -- and the RFPs are developed, I hope we look at the opportunities for small women and minority owned businesses on the track work, train stations, the locomotives and the wayside equipment.

Response Your comment highlights an important part of the High Speed Rail Empire Corridor Program in creating economic opportunities as part of the process. The New York State Department of Transportation is committed to supporting the opportunities for "Disadvantaged Business Enterprises" and has a program that supports these goals. Further information is available at: <https://www.dot.ny.gov/main/business-center/civil-rights/dbe>

Commenter Gualtieri, Joseph, DSA, DSA

Comment 0-27-1 As a distribution company with significant rail customers shipping via rail thru NY, I appreciate the state's continued focus on economic development and pro-business efforts, but I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Compromised or limited service on the current freight network may force our customers to alter their business distribution methods and begin shipping more products by truck – increasing cost, increasing our environmental footprint and increasing traffic on New York roadways.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail.

Commenter Gualtieri, Joseph, DSA, DSA

Comment O-27-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Gomez, Richard, East Coast Warehouse & Distribution Corporation, East Coast Warehouse & Distribution Corporation
Comment O-28-1	As a company that relies on Freight Rail service to my distribution center, I am concerned that there may be some changes that will affect the timely manner in which I receive my shipments from Canada. The commodity only has a short life and my customer believes in just in time product flows. Adding any time needed to ship to me will adversely affect our ability to turn the product as low cost as possible. any delays will mean lost sales. I am against any sharing of the freight system rail lines without adding additional safeguards to maintain or reduce lead times in the freight rail network.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail. Specifically in the Tier 1 EIS, Chapters 3 and 4 discuss the positive impacts of the program, with Section 4.3 Regional Population and Employment, and Business Districts, discussing how the program will create employment opportunities and support the labor markets in the regions served by the improved rail service. The importance of preserving and improving freight rail traffic to the economy of New York State has been an important factor in the selection of the Preferred Alternative.
Commenter	Becker, Bruce, President, Empire State Passenger Association, Empire State Passenger Association
Comment O-29-1	On behalf of the Empire State Passengers Association (ESPA), I am submitting the following information in support of the 110MPH alternative ESPA is pleased to provide its unqualified support for the 110mph alternative. We believe that this option provides the best opportunity to significantly increase ridership and fundamentally shift travel patterns in the years to come.
Response	Thank you for your comment supporting Alternative 110 and the benefits from high speed rail. Alternative 90B, the Preferred Alternative, would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered (see Exhibit 6-8 in the Tier 1 FEIS). Moreover, Alternative 90B would incur lower costs and fewer environmental impacts than Alternatives 110. For these reasons, this alternative was dismissed from further consideration.
Commenter	Becker, Bruce, President, Empire State Passenger Association, Empire State Passenger Association

Comment O-29-2	When financing resources are being considered, we strongly encourage the investigation of innovative funding solutions, including public-private partnerships and station-area development interest participation.
Response	Suggestions from the public have been considered, and opportunities for innovative funding solutions could be explored in the future during Tier 2 assessments. .
Commenter	Becker, Bruce, President, Empire State Passenger Association, Empire State Passenger Association
Comment O-29-3	I am the president of Empire State Passenger Association. After careful consideration of the presented information and options, ESPA is pleased to announce it's unqualified [sic] to work with the 110 mile per hour alternative. We believe that this option provides the best opportunities to significantly increase ridership and fundamentally shift travel time. A fully built 110 alternative will reduce travels time between Buffalo and Albany by an hour and provide for trips of just over six and a half hours from Buffalo to midtown Manhattan.
Response	Thank you for your comments in support of the 110 Alternative. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Alternative 90B would provide substantial travel time savings, but would constrain more of the additional trackage within the existing right-of-way than Alternative 110. Based on this, and resulting lower costs and impacts, Alternative 90B has been selected as the Preferred Alternative.
Commenter	Becker, Bruce, President, Empire State Passenger Association, Empire State Passenger Association
Comment O-29-4	It could be a substantial economic driver for the entire upstate region.
Response	We agree with your comment that the High Speed Rail Empire Corridor Program will be an important economic driver to the region. Key goals of the program are to improve service reliability, frequency of service, and train speeds.
Commenter	Becker, Bruce, President, Empire State Passenger Association, Empire State Passenger Association
Comment O-29-5	It would be a catalyst for economic development near the stations. We are here in Buffalo have a particularly good position to take full advantage of such development with the new downtown station located in close proximity to the medical center, the harbor center, and our emerging walkway.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. The Buffalo-Exchange Station has recently been reconstructed and a new station building constructed, which should provide improved access and benefits economic development.
Commenter	Becker, Bruce, President, Empire State Passenger Association, Empire State Passenger Association
Comment O-29-6	While funding sources for this ambitious alternative have not yet been determined, it must be kept in mind that required projects would be completed in phases over multiple years. The alternative overall cost would be paid for in management projects. Financial resources are being considered to be strongly encourage the investigation of innovative funding solutions will be public/private partnerships and stationary developmental participation.

Response	Thank you for your comments on funding and program staging. Comments from the public on the financing and construction were considered in the development of the phased implementation presented in the Service Development Plan.
Commenter	Cabal, Andrew, Empire State Passenger Association, Empire State Passenger Association
Comment 0-29-7	I am Andrew Cabal and I am a councilman of the National Association of Railroad Passengers out of Washington as well as the Empire State Passengers Association, which is New York's local rail advocacy group First of all, ESPA supports the DEIS 110 mile per hour alternative option because this option allows for future improvement projects across the Empire Corridor necessary to increase the maximum operating speed to 110 miles an hour in locations where such speeds are possible, cost effective and beneficial.
Response	Thank you for your comment supporting the 110 Alternative and the benefits from high speed rail. Because of the required property acquisition, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance. For these reasons, this alternative was dismissed from further consideration.
Commenter	Cabal, Andrew, Empire State Passenger Association, Empire State Passenger Association
Comment 0-29-8	The hundred the -- high speed does not -- does not include either Utica or Schenectady or other stations such as Rome or Amsterdam. That should be understood because a lot of trips -- a lot of trips are made from Syracuse especially to Utica and to Schenectady.
Response	Your comments about preserving and offering intercity rail passenger service for the City of Utica have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative. Alternative 125 was designed to help cut the distance between Albany and Syracuse by 14 miles, but one of the major drawbacks of this route is that it passes to the south of the stations on the current Empire Corridor in the Mohawk Valley between Syracuse and Albany. Therefore, express service would not serve Rome, Utica, Amsterdam and Schenectady. The Preferred Alternative, Alternative 90B, was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance. As discussed in Chapter 3 of the Tier 1 FEIS, the Preferred Alternative would increase service to Utica.
Commenter	Cabal, Andrew, Empire State Passenger Association, Empire State Passenger Association
Comment 0-29-9	And a little extemporaneous here, the high speed systems throughout the world, especially in France and in Germany and in Spain, they came about by incremental improvement, utilizing existing tracks in every locations, especially in the major cities, with high speed lines built in the interlands, if you will. It's the same way the thruway system was built in this country.
Response	Thank you for your comments on how to incrementally develop the high speed rail service on the Empire Corridor. The selection of the Preferred Alternative included consideration of constructability, and one of the advantages of Alternative 90B is that more of the additional trackage is constrained to the existing right-of-way (than Alternatives 110 or 125) and benefits can accrue within 2 to 5 years of the start of construction. The program schedule is outlined in the Service Development Plan, and building individual segments and supporting infrastructure, based on identification of funding and other factors, may follow an incremental approach to bringing the program into revenue service.
Commenter	Cabal, Andrew, Empire State Passenger Association, Empire State Passenger Association

Comment 0-29-10	Just a couple of things that I think Upstate should know about their rail heritage: Between Syracuse and Utica, the running time -- up until the late 1960s, the running time was of the fastest of the top ten trains in the country, Syracuse to Utica. A little bit -- a little bit of trivia. And, also, during the administrations of Governor Malcolm Wilson, remember him, he came after Rockefeller, and Governor Hugh Carry -- Malcolm Wilson, by the way, did a lot of work for -- for passenger rail. He, through his administration, improved the trip times between New York City and Albany from what was almost three hours to today's times of about two hours and 10, 2 hours and 20 minutes. Now, back then, it was also promised in the Transportation Bond Act, I think of 1979, that they would have an hour and 55 minute times between Albany and Syracuse, an hour and 55 minutes times between Syracuse and Buffalo. That was in 1979 that was promised to the true Upstaters. And it's 2014 now and we are nowhere near those trip times. So, hopefully, with the hard work that you are doing, we'll be able to achieve those in hopefully my lifetime.
Response	Thank you for your comments discussing the importance of Utica on the route and your support for the High Speed Rail Empire Corridor Program. The Preferred Alternative, Alternative 90B, would improve service to Utica and these other western cities.
Commenter	Godfrey, Ben, Empire State Passenger Association, Empire State Passenger Association
Comment 0-29-11	Hello, my name is Ben Godfrey and I'm with the Empire State Passenger Association. We're a state-wide advocacy group for improved rail passenger services in the state, and as a group, we vote for the 110 miles per hour. From an engineering standpoint, we think the HNTB, the DOT, and the FRA have done a great job doing this engineer study. Having said that, I support the 110 as the most feasible option for an engineering standpoint.
Response	Thank you for your comment supporting the 110 Alternative and the benefits from high speed rail. Public participation in the program has been an important part of the selection process for the Preferred Alternative. Because of the required property acquisition, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance. For these reasons, this alternative was dismissed from further consideration.
Commenter	Godfrey, Ben, Empire State Passenger Association, Empire State Passenger Association
Comment 0-29-12	With regard to the study here, it seems to me that ridership estimates seem quite low.
Response	Thank you for your evaluation of the ridership levels in the Tier 1 DEIS. Estimates for the ridership in the Tier 1 EIS were forecast for primarily trips that began and ended along the Empire Corridor between New York City and Niagara Falls. Additional ridership may be present on the line for those riders on trains that serve areas outside the Empire Corridor that are not part of the High Speed Rail Empire Corridor Program.
Commenter	Godfrey, Ben, Empire State Passenger Association, Empire State Passenger Association
Comment 0-29-13	I also think the study is not fully taking into account CSX's expanding operations out of there. I think CSX itself is going to need additional track capacity just to handle their freight business which is growing pretty dramatically at this point.
Response	Thank you for your comments on CSX operations on the Empire Corridor. In developing the operating plans and train performance simulations for the High Speed Rail Empire Corridor Program, CSX Transportation had the opportunity to provide input in formulating the

	criteria and rail operations forecasting. CSX Transportation provided information supporting the expansion of their operations in the future.
Commenter	Greenhagle, Karl, Empire State Passenger Association, Empire State Passenger Association
Comment O-29-14	I represent the Empire State Passengers Association, Our committee has analyzed all the various plans proposed and our organization supports the 110-mile-per-hour plan. And that's the reason why, because we feel that was the most feasible at the least amount of cost and you get the greatest benefit.
Response	Thank you for your comment supporting the 110 Alternative and the benefits from high speed rail. Alternative 90B, the Preferred Alternative, would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered (see Exhibit 6-8 in the Tier 1 FEIS). Moreover, Alternative 90B would incur lower costs and fewer environmental impacts than Alternatives 110. For these reasons, this alternative was dismissed from further consideration.
Commenter	Greenhagle, Karl, Empire State Passenger Association, Empire State Passenger Association
Comment O-29-15	it should be a dedicated set of rails for passenger service
Response	Thank you for your comments on providing a dedicated tracks for passenger trains, which have been considered as part of the review of the Tier 1 DEIS. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional tracks to better segregate passenger and freight rail.
Commenter	Greenhagle, Karl, Empire State Passenger Association, Empire State Passenger Association
Comment O-29-16	our organization is really promoting the 110. But I must give you a footnote: Personally, I like the 120 (sic). And I think when you look at these type of long-range capital investments, you need to look further out. And I think we need to go for the higher technology.
Response	Thank you for your comments on the 125 Alternative, which have been considered by the FRA and NYSDOT in the selection process for the Preferred Alternative. The Preferred Alternative, Alternative 90B, was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. Because it is situated largely within the existing right-of-way, it can be constructed in substantially less time than Alternative 125 and will begin to confer benefits within 2 to 5 years after start of construction. Unlike the 125 express service, which would bypass existing stations at Schenectady, Amsterdam, Rome, Utica, and Buffalo-Depew, it will improve service to these existing stations.
Commenter	Prophet, Gary, Vice President, Empire State Passenger Association, Empire State Passenger Association
Comment O-29-17	I'm vice president of the Empire State Passenger's Association. We are a statewide organization looking at improving both rail and public transit throughout the State of New York and the major cities of New York State. I would like to give our organization endorsement of the 110 option

Response	Thank you for your comments supporting the 110 Alternative and the benefits from high speed rail, which have been considered in the selection process for the Preferred Alternative. Alternative 90B, the Preferred Alternative, would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered (see Exhibit 6-8 in the Tier 1 FEIS). Moreover, Alternative 90B would incur lower costs and fewer environmental impacts than Alternatives 110. For these reasons, this alternative was dismissed from further consideration.
Commenter	Prophet, Gary, Vice President, Empire State Passenger Association, Empire State Passenger Association
Comment 0-29-18	One of the issues with the 90-A and 90-B options is they just do not have enough track capacity in order to have the service provided, especially when you figure it is one of the busiest freight lines, which is the freight line owned by CSX. Also, reducing the travel time from Albany to New York down to two hours we believe is very key
Response	Thank you for your comments on the 90A and 90B Alternatives in the Tier 1 DEIS. Specific track diagrams and operating programs were developed for each of the alternatives discussed in the Tier 1 EIS for the High Speed Rail Empire Corridor. This information was then used to support the modeling and simulation of operation over the track layouts in each of the alternatives. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional tracks to better segregate passenger and freight rail.
Commenter	Prophet, Gary, Vice President, Empire State Passenger Association, Empire State Passenger Association
Comment 0-29-19	One of the issues with the 125 mile-per-hour option is not only does it bypass several cities in upstate New York, but we believe taking existing land that is not part of our corridor right now for freight travel or passenger travel is just not a good option at the cost of 15 billion.
Response	Thank you for your comment on the 125 Alternative. This alternative has been dismissed from further consideration, and the factors outlined in your comment were among the reasons it was deemed inferior to the Preferred Alternative (Alternative 90B).
Commenter	Prophet, Gary, Vice President, Empire State Passenger Association, Empire State Passenger Association
Comment 0-29-20	The better transit connections are also key, along with increased parking, cities such stations as Rhinecliff and Buffalo need additional parking.
Response	Thank you for your comments on improving the connections along the Empire Corridor. Improving the intermodal connections along the Empire Corridor is one of the focuses of the High Speed Rail Empire Corridor and NYSDOT. Improvements, including parking, have been made at a number of new stations. These improvements include accessibility improvements at the Buffalo-Depew Station and new stations constructed at Buffalo-Exchange Street Station, Albany-Rensselaer, and Rochester. The needs can be reviewed for additional parking at stations, as station projects are studied and continue to advance, along the route.
Commenter	Prophet, Gary, Vice President, Empire State Passenger Association, Empire State Passenger Association
Comment 0-29-21	The Alternative 110 is clearly the best option, with significant improvements for passengers and limited environmental concerns.

Response	Thank you for your comment supporting the 110 Alternative. Public participation in the program has been an important part of the selection process for the Preferred Alternative. Alternative 90B, the Preferred Alternative, would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered (see Exhibit 6-8 in the Tier 1 FEIS). Moreover, Alternative 90B would incur lower costs and fewer environmental impacts than Alternatives 110. For these reasons, this alternative was dismissed from further consideration.
Commenter	Prophet, Gary, Vice President, Empire State Passenger Association, Empire State Passenger Association
Comment O-29-22	I do question the travel time of several of the alternatives, especially the Alternative 110. The Alternative 110 should have a lower travel time New York City to Niagara Falls, as 7 hours 22 minutes would seem to include significant pad time. The goal of Alternative 110 should be 2 hours NYC to Albany, 4 hours Albany to Buffalo-Depew, and 45 minutes Buffalo-Depew to Niagara Falls. I think presenting the actual travel time without pad time of actual schedules would show the travel time in a clearer way.
Response	Thank you for your comments on the travel time estimates for the various alternatives considered in the Tier 1 DEIS. The travel times for the different segments of the route for each of the alternatives are discussed in Chapters 3 and 6 of the Tier 1 EIS. These were developed by using simulations of the Empire Corridor under different scenarios and equipment assignments.
Commenter	Prophet, Gary, Vice President, Empire State Passenger Association, Empire State Passenger Association
Comment O-29-23	The repeated assertion that Alternative 125 would be 100% on-time is not realistic.
Response	Thank you for your comment regarding on time performance of the Alternative 125. Targets for the on time performance for each of the alternatives were determined utilizing simulations of the Empire Corridor with different operating factors and interfaces with other traffic on the routes. Details of the analysis can be found in Appendix D of the Tier 1 FEIS.
Commenter	Prophet, Gary, Vice President, Empire State Passenger Association, Empire State Passenger Association
Comment O-29-24	Specific service items should be included, as they are imperative to any improvement in the passenger rail in New York State and include the following passenger rail service items: train from Syracuse that arrives NYC before 11 am, train from Saratoga/Schenectady that arrives NYP before 10 am, train from NYC to Niagara Falls that departs NYC after 3 pm
Response	Thank you for your continued interest in the High Speed Rail Empire Corridor Program. Suggestions and comments for improvements to the service have been considered in the development of the Service Development Plan for the Empire Corridor High Speed Rail Program. Operating timetables will be examined in detail in the Tier 2 assessments.
Commenter	Prophet, Gary, Vice President, Empire State Passenger Association, Empire State Passenger Association
Comment O-29-25	To improve service options for passengers, there needs to be an overnight train across New York State, which would also connect New York State with Toronto. A 10 pm train from NYC to Buffalo would be of great benefit and would provide a morning Toronto arrival from upstate New York.

Response	Thank you for your suggestion regarding overnight service from New York City to Toronto. The scope of the High Speed Rail Empire Corridor Program is focused on improvements between New York City and Niagara Falls. The program will improve service that operates along Empire Corridor, including Maple Leaf service that continues into Toronto. Suggestions and recommendations by the public for improvements to the service have been considered in the development of the Service Development Plan, and operating timetables can be further developed in Tier 2 assessments.
Commenter	Prophet, Gary, Vice President, Empire State Passenger Association, Empire State Passenger Association
Comment O-29-26	For the Hudson Valley, there is opportunity for speed improvements, including on the west side of Manhattan where speeds could be increased to 79mph for about half of the 11 miles, from the current 50-70mph. From Poughkeepsie to Albany, speeds should be 110mph on as much as is possible, within the limitation of curves, which would require bridges to be improved. Also, the 3rd station track through Poughkeepsie is often used for Amtrak trains, which limits Amtrak to about 15mph for a couple of miles. This is ridiculous and all 3 current tracks through the Poughkeepsie station should be regular track speed. In addition, a fourth track, closest to the station, should be re-activated and used by Metro-North for some trains starting and ending at Poughkeepsie, so that out of service Metro-North trains are not blocking two of the main tracks.
Response	Thank you for your comments regarding improvements to operating speeds and station operations. Operating speeds and station operations for the routes and segments in the High Speed Rail Empire Corridor Program have been studied in developing the Service Development Plan for the Preferred Alternative and the Tier 1 EIS. The proposed improvements/operations will need to meet both the engineering standards of the supporting railroads and Federal Railroad Administration regulations. The FRA and NYSDOT have considered operating speeds and trip times in the selection of Alternative 90B as the Preferred Alternative.
Commenter	Prophet, Gary, Vice President, Empire State Passenger Association, Empire State Passenger Association
Comment O-29-27	The current, low speed 2.5 mile siding through Beacon should be extended further south by several miles and should be a 90mph track. In the EIS document, this existing siding is referred to as "south of Cold Spring" which is incorrect, as it is north of Cold Spring.
Response	Thank you for sharing the incorrect location for the siding at Beacon, New York. The Tier 1 FEIS document has been corrected with the correct location and limits.
Commenter	Prophet, Gary, Vice President, Empire State Passenger Association, Empire State Passenger Association
Comment O-29-28	On page 2-32, it states that the top speed between Croton and Poughkeepsie is 79mph, which is not true.
Response	Thank you for pointing out the possible inaccuracy in the Tier 1 FEIS. Modifications have been made.
Commenter	Prophet, Gary, Vice President, Empire State Passenger Association, Empire State Passenger Association
Comment O-29-29	Regarding the discussion of stations, two are in desperate need of parking expansion. The Rhinecliff station should have parking extended further north along the tracks and in fact, this would create a new exit to the north onto Slate Dock Road. Connecting bus service should connect this station with Red Hook, Bard College, and a parking lot at River Road and Route 199. The Buffalo-Depew station also needs more parking, which can be extended

to the east and possible other vacant land in the immediate area. The downtown Buffalo station needs to be rebuilt to serve the growing Buffalo waterfront developments.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program. The Tier 1 EIS evaluates a range of corridor-level service improvements for the purpose of making decisions on corridor-level service. Station improvements included in each of the alternative are discussed in Chapter 3 of the Tier 1 EIS. Station improvements as part of separate projects have been advancing independently, including the recent complete reconstruction of the Buffalo-Exchange Street Station and parking lot and accessibility improvements at the Buffalo-Depew Station. The FRA and NYSDOT will consider station locations and potential ridership and revenue opportunities in advancing the Preferred Alternative in Tier 2 assessments.

Commenter Prophet, Gary, Vice President, Empire State Passenger Association, Empire State Passenger Association

Comment 0-29-30 Connecting bus service should be implemented where possible

Response Thank you for your comments on the High Speed Rail Empire Corridor Program. The Tier 1 EIS evaluates a range of corridor-level service improvements for the purpose of making decisions on corridor-level service, including service reliability, service frequency, and train speeds. Once the FRA and NYSDOT complete the selection process for a Preferred Alternative under the Tier 1 program, individual projects or groups of projects will be advanced according to the Service Development Plan to Tier 2 environmental evaluations and design development. Suggestions and comments for improving connectivity between different modes of transportation with rail passenger service have been considered in the development of the Service Development Plan. For station projects, opportunities for multimodal connectivity can be pursued with the local municipality and transit provider.

Commenter Prophet, Gary, Vice President, Empire State Passenger Association, Empire State Passenger Association

Comment 0-29-31 As far as additional track west of Schenectady, increased portions of a 3rd track are desperately needed through the Mohawk Valley, as much congestion occurs in this area due to slow moving freight trains

Response Thank you for your comments. Improvement of passenger rail service and maintaining freight operations along the Empire Corridor is the goal for the High Speed Rail Empire Corridor Program. Alternative 90B would add dedicated third main track for approximately 273 miles between Schenectady (MP 159) and Buffalo-Depew (MP 432). The importance of preserving and improving freight rail traffic to the economy of New York State has been an important factor in the selection of a Preferred Alternative.

Commenter Prophet, Gary, Vice President, Empire State Passenger Association, Empire State Passenger Association

Comment 0-29-32 about a mile east of the Buffalo-Depew station, a third track would allow for improved flow of freight trains in this area immediately east of major freight yard operations,

Response Thank you for your suggestion regarding track improvements in the Buffalo-Depew area. The Preferred Alternative would add a dedicated third main track extending east of Buffalo-Depew to Schenectady. The Tier 1 Environmental Impact Statement discusses the operation of multiple tracks, and specific track diagrams were developed to support the modeling and simulation of operation using multiple tracks. Comments from the public have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter Prophet, Gary, Vice President, Empire State Passenger Association, Empire State Passenger Association

Comment O-29-33	From Buffalo to Niagara Falls, this area should be nearly all double tracked, at least 60mph (or 79mph) and the hand thrown switches near Niagara Falls need to be replaced. Also, 2 tracks, one of which could be a stub end or part of the branch line that proceeds north just before the new Niagara Falls station, are needed so that if the station track is taken by train which is being processed by customs, another train could start or terminate at Niagara Falls. It would not be beneficial if an eastbound train is at the station (from Toronto) and a train comes from NYC and it must wait for an hour 300 feet from the station,
Response	Thank you for your comments and suggestions. Improvements to tracks and stations for each alternative are discussed in Chapter 3 of the Tier 1 EIS. The Preferred Alternative, Alternative 90B, includes doubletracking 11 miles along the Niagara Branch. The Niagara Falls International Railway Station and Transportation Center completed in 2016 relocated the station closer to the tourism destinations, 1 mile to the west. Crews still perform train cleaning and minor maintenance at the former station location, which includes layover yards, and trains are turned around in the yard tracks after stopping at the new station.
Commenter	Prophet, Gary, Vice President, Empire State Passenger Association, Empire State Passenger Association
Comment O-29-34	With the continued congestion of Sunnyside Yard, NYS should at least look into options of separating the Empire Corridor from Sunnyside Yard,
Response	Thank you for your comments and suggestions. Currently, Amtrak Empire Corridor trains are stored and serviced, between runs, to and from Penn Station in Manhattan at the Amtrak facilities in Sunnyside Yard in Queens, New York. The Amtrak facilities provide servicing for the trains and the ability to turn the equipment for the proper direction of travel. Development of a separate facility in New York City, for the servicing of Empire Corridor trains, is not part of the Tier 1 EIS at this time.
Commenter	Prophet, Gary, Vice President, Empire State Passenger Association, Empire State Passenger Association
Comment O-29-35	There was very little discussed in the document about equipment, other than vague references to trainsets.
Response	Thank you for your comments. Equipment requirements provided for in each alternative are discussed in Chapter 3 of the Tier 1 EIS. The Tier 1 EIS is focused corridor level improvements to introduce higher passenger train speeds on the Empire Corridor and to improve reliability, travel times, levels of train service and passenger amenities. Specific details on equipment needs will undergo a second evaluation (Tier 2) to determine the best solution for the Preferred Alternative (Alternative 90B).
Commenter	Prophet, Gary, Vice President, Empire State Passenger Association, Empire State Passenger Association
Comment O-29-36	I did not see any mention of Dunkirk in the document. With the increased service outlined in the document, one additional train should be considered to operate west from Buffalo to serve Dunkirk, Erie, PA and end in either Cleveland or Toledo.
Response	Thank you for your comments. The High Speed Rail Empire Corridor Program outlined in the Tier 1 EIS focuses on improvements and alternatives on or near the current alignment of the rail passenger service between Albany and Niagara Falls, New York. Selection of the Preferred Alternative by the FRA and NYSDOT focused on the alternatives outlined in the Tier 1 EIS. Extending service to destinations toward Pennsylvania could be part of future studies for expanding service beyond the current area outlined in the Tier 1 EIS.
Commenter	Rudman, Anthony, Empire State Passenger Association, Empire State Passenger Association

Comment O-29-37	<p>I am Anthony Rudman, the Capital District Coordinator of the Empire State Passenger Association. The 1,400 members of our association have been working for over three decades to improve inter-city passenger rail opportunities for New York residents. We support the EIS Alternative 110 as the preferred alternative for the final study report. Because Federal guidelines for developing environmental impact statements are directive, we think that the ridership growth and revenue estimates presented are very conservative and Alternative 110 actually would have revenue and passenger ridership numbers higher than projected in the report. The cost of Alternative 110 is affordable, because it is spread over time and will be drawn from diverse sources.</p> <p>We urge New York State to give its residents the chance to experience a greater travel mobility and economic opportunities by selecting Alternative 110 as the EIS preferred Alternate recommendation.</p>
Response	<p>Thank you for your comments in support of the 110 Alternative, which has been considered in the selection of the Preferred Alternative. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. Alternative 90B would also provide substantial travel time savings, but would constrain more of the additional trackage within the existing right-of-way than Alternative 110. Based on this, and resulting lower costs and impacts, Alternative 90B has been selected as the Preferred Alternative.</p>
Commenter	Gianotti, Gary, Empire State Passenger Association, Empire State Passenger Association
Comment O-29-38	<p>My name is Gary Gianotti and I am the Utica-area coordinator of the Empire State Passengers Association. ESPA and myself support the 110 mile per hour alternative.</p>
Response	<p>Thank you for your comment on the High Speed Rail Empire Corridor Program. Support and interest from the public, relating to Alternative 110, have been considered by FRA and NYSDOT in the selection process for a Preferred Alternative. Alternative 90B would provide substantial travel time savings, but would constrain more of the additional trackage within the existing right-of-way than Alternative 110. Based on this, and resulting lower costs and impacts, Alternative 90B has been selected as the Preferred Alternative.</p>
Commenter	Turon, Benjamin J., Empire State Passenger Association, Empire State Passenger Association
Comment O-29-39	<p>‘Alternative 110’ seems to be the favored contender because it offers the biggest bang for the buck.</p> <p>The Empire State Passenger Association the rail advocacy organization I’m a member of supports ‘Alternative 110’ because it allows for the incremental upgrading of the existing rail infrastructure, with each new additional project leading to a gradual improvement in service until it reaches a level of speed, frequency, and reliability far superior to today’s service. It also serves all of the existing stations unlike ‘Alternative 125’ which bypasses Schenectady, Amsterdam, Utica, and Rome.</p> <p>Many people may be disappointed that “true HSR” is not being considered, but the reality is the Empire Corridor thru Upstate New York lacks the population to support “Very High-Speed Rail” (VHSR) with trains traveling up to 200-mph on newly high-speed railways, thus the focus on “Higher Speed Rail” (HrSR) instead.</p> <p>For a VHSR service like the French TGV to be economically viable the new rail lines must have annual ridership numbers of about 10-million, and an all-new-build super system like the Shinkansen or Maglev requires about 50-million passengers annually. In Spain where the national government fueled by EU subsidies plowed ahead with new dedicated high-speed lines regardless of geography, demographics, and economics; ridership has been</p>

disappointing with revenues reportedly even below the level needed to cover yearly operating expenses, let alone to recoup the initial construction costs.

This problem can also be seen in the projections for 'Alternative 125' which would entail the building of a new 125-mph railway from Albany to Buffalo at the cost of \$15 billion, for which annual ridership only would be 4.3 million despite the huge investment. The service would require an annual subsidy of \$59 million, compare to \$24 million in 'Alternative 110' which is roughly equal to what New York State is today now paying Amtrak to run the existing Empire Service.

Response Thank you for your interest in the Empire Corridor High Speed Rail Program. Support and interest from the public, relating to Alternative 110, have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Because of the required property acquisition, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance. For these reasons, this alternative was dismissed from further consideration

Commenter **Turon, Benjamin J., Empire State Passenger Association, Empire State Passenger Association**

Comment 0-29-40 Based on this in my opinion 'Alternative 110' is indeed the most logically choice, but it also in my opinion could be much improved by the inclusion of the following...
 Tilting Train-sets: Replacing the aging Amfleet coaches as called for in 'Alternative 110' with new tilt-body coaches could further reduce travel times by allowing faster speeds around the numerous curves south of Albany on the Hudson Line, in the Mohawk Valley, and between Syracuse and Rochester.
 By leaning into a curve by 2 to 8-degrees depending on the tilt system, a train can round a curve up to 40-percent faster while maintaining passenger comfort and safety. Tilting trains could boost average speeds into the 70-mph range. Tilting trains have spread from pioneering services like the X2000 to becoming a mainstay of modern passenger rail services.
 Tilting-trains do not necessarily require the locomotive to be tilting so this would not complicate the acquisition of new engines. And the costs of tilt operations could be minimized by using the new state-of-the-art air suspension tilt-systems developed by Japanese manufacturers Fuji, Kawasaki, and Nippon Sharyo, which enable tilt angles up to 3-degrees.

Response Thank you for your comments. Equipment requirements provided for in each alternative are discussed in Chapter 3 of the Tier 1 EIS. The Tier 1 EIS is focused on corridor level improvements to introduce higher passenger train speeds on the Empire Corridor and to improve reliability, travel times, levels of train service and passenger amenities. Specific details on equipment needs will undergo a second evaluation (Tier 2) to determine the best solution for the Preferred Alternative. Comments from the public, relating to the types of equipment to be operated as part of the High Speed Rail Empire Corridor Program, have been considered by FRA and NYSDOT in the selection process for the Preferred Alternative.

Commenter **Turon, Benjamin J., Empire State Passenger Association, Empire State Passenger Association**

Comment 0-29-41 125-MPH Speeds: The DEIS rejected 125-mph speeds on the existing CSX right-of-way utilizing the planned infrastructure improvements of 'Alternative 110' because this would require extensive grade-separation due to Federal Railroad Administration standards that while not absolutely forbidding highway grade crossings at 125-mph, are so strict that they can't be technologically overcome.

However the 68-miles between Rensselaer and Poughkeepsie may be another matter since commercial speeds of 125-mph were studied and planned during the Pataki Era HSR program. None of the grade crossings are major roads, they are all low-speed access lanes to riverside farms, homes, and businesses and it's possible that rebuilding the crossings to the highest standards with warning lights, crash barrier-gates, and radar/laser presence detection systems could win a FRA waiver.

Amtrak's next generation of diesel locomotives and coaches will be designed to have top commercial speeds of 125-mph, so it would be a shame not to utilize this capability somewhere on the corridor. The combination of tilting train-sets and speeds up to 125-mph could cut the travel time New York-Albany to just a bit under 2-hrs with an average speed of 75-mph. The biggest benefit however could be in publicity since such service actually meets the international definition of "true HSR".

Response Thank you for your comment regarding safety improvements on the Empire Corridor. Improving safety of rail transportation on the Empire Corridor was considered a key goal of the High Speed Rail Empire Corridor Program for both freight and passenger trains. Chapters 2 and 3 of the Tier 1 EIS address safety for the existing corridor and the program alternatives. Treatments for specific grade crossings would be considered during the development of individual projects designed to implement the Preferred Alternative. Individual projects, or groups of projects, will undergo a second evaluation (Tier 2) to determine the best alternative for that project, or group of projects.

Comments from the public, discussing the safety and the operation of the high speed trains for both grade crossings and along the right of way, have been considered by FRA and NYSDOT in the selection process for a Preferred Alternative.

Commenter **Turon, Benjamin J., Empire State Passenger Association, Empire State Passenger Association**

Comment **0-29-42** JFK Connection: Around the world many international airports have direct intercity rail links allowing passengers to change modes as easy as they change airlines or planes. Frankfurt International is the hub of the 'AIRail Service' where airline passengers from Lufthansa, American Airlines, and Emirates can thanks to a code-share agreement make direct thru-ticketing transfers to the national railway Deutsche Bahn's ICE trains to Stuttgart, Bonn, and Cologne.

Such a rail-air connection could be created for the Empire Service if the present service was extended down the mainline of the Long Island Railroad to Jamaica Station where via the airport's AirTrain people mover a direct connection can be made to all 9 terminals of JFK International.

Just west of Jamaica is Belmont Park, which has a large but mostly unused 4-platform 8-track LIRR station. Intercity trains could be serviced here and thanks to a triangle wye junction with the mainline be turned so they can return back to Albany, locomotive first. Belmont Park is of course a famous thoroughbred race track, the site of a possible casino, and would make an excellent "park n' ride" station for suburban Long Island residents.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program. The goals and objectives of the program are the improvement of intercity rail passenger service along the Empire Corridor from New York City to Niagara Falls. Projects to further develop connectivity could be part of other projects or studies in the future.

Commenter **Turon, Benjamin J., Empire State Passenger Association, Empire State Passenger Association**

Comment **0-29-43** Albany-Colonie Station: With increasing ridership a new station in the Capital District will be required given that Schenectady has limited parking and Albany-Rensselaer is constrained by two-lane streets and is on the far less populated side of the Hudson River. Parking is important because the car is the primary form of transport in the Capital District.

An excellent site is actually now available, a 9-acre parcel of industrial land on Railroad Ave next to the Amtrak mainline and right off Fuller Road between SUNY Albany and Wolf Road that is on the market for \$2.25-million. No need for lengthy eminent domain proceedings, immediate purchase of this property would secure an excellent central location for a regional 'park-and-ride' station adjacent to the interchange of the I-90 and I-87. The station could also be tied into the UAlbany Bus and CDTA BusPlus services.

The NYS Senate HSR Task Force in its 2006 report recommended a new station in the "vicinity of the State Campus on the west side of Albany" to be built "in parallel" with the new Albany-Schenectady second track.

Response Thank you for your comment on a new Albany Station location. The Tier 1 EIS for the High Speed Rail Empire Corridor Program evaluated a range of corridor-level service improvements for intercity passenger rail with the purpose of making decisions on system wide level service, including service reliability, frequency, and train speeds. The Tier 1 EIS considers using the existing stations in each of the alternatives; the inclusion of additional stations along the Empire Corridor would be part of future studies for expanding service.

Commenter **Turon, Benjamin J., Empire State Passenger Association, Empire State Passenger Association**

Comment 0-29-44 Extended Service: With the proposal to increase Albany-New York frequencies from today's 13-round trips to 17, some of these trains should be extended to Schenectady and Saratoga Springs to provide early morning departures and late evening arrivals. In the 1980s Schenectady had such service because the old Turboliners trains were double-ended with streamline cabs, allowing for bi-directional travel to and from Schenectady. However another option today is to run a late evening train to Saratoga Springs where it could be turned for a return trip by using a wye just south of the station. The Saratoga Springs Rail Station also has two storage tracks where a train can be kept overnight; there should be little interference with the tourist train operations of the Saratoga & North Creek Railway or the freight operations of CP Rail. After an overnight layover the train would be ready for an early morning departure to New York City, stopping also at Schenectady and my proposed Albany-Colonie station. Also even without push-pull bidirectional train-sets the use of cab-cars at the end of future train-sets might be useful to ease the necessary turning of train-sets at wyes at Niagara Falls, Saratoga Springs, Rutland, Rensselaer, and Belmont Park.

Response Thank you for your comment on the HSR Empire Corridor Program. The program considers improvement alternatives for the Empire Corridor between New York City and Albany and Albany to Niagara Falls. Suggestions and comments, for improvements to the service outside of these limits, including service extending to Saratoga Springs, have been considered in the Service Development Plan for the High Speed Rail Empire Corridor Program.

Commenter **Turon, Benjamin J., Empire State Passenger Association, Empire State Passenger Association**

Comment 0-29-45 Overnight Service: The 7½ hour travel time New York City-Niagara Falls in 'Alternative 110' is too long for a practical day-trip, however it is ideal for an overnight sleeper train service like that offered by German's 'City Night Line' which despite low budget airlines and high-speed rail has been reinvested in by Deutsche Bahn. The attraction of such services is that they combine air travel and hotel stays into one vehicle, the train being essentially a moving hotel. No need for a red-eye flight or the hassle of travel to and from the airport. You check-in late in the evening in one city and wakeup in another city well rested. Such a service with a 9-hour schedule travel time between New York City and Buffalo-Niagara might prove popular to both business and leisure travelers including foreign

tourists. New York-Montreal is another potential route for such an overnight “hotel-train” service.

Response Thank you for your comment on the High Speed Rail Empire Corridor Program. The purpose of the program is to introduce higher passenger train speeds on the Empire Corridor and to improve reliability, travel times, levels of train service and passenger amenities. Comments from the public, supporting the program, have been considered by the FRA and NYSDOT in selecting the Preferred Alternative. The program considers improvement alternatives for the Empire Corridor between New York City and Niagara Falls. The program will improve service that operates along Empire Corridor, including Maple Leaf service that continues into Toronto. Further improvements or enhancements to the service can be studied in the future, and operating timetables can be further developed as part of Tier 2 assessments.

Commenter **Turon, Benjamin J., Empire State Passenger Association, Empire State Passenger Association**

Comment 0-29-46 However I’m not in favor of building a new station [Buffalo-Exchange Street Station] because there really is no longer a viable alternative site for a downtown station that would also be close to the Metro Rail. I believe that instead the existing station could actually be greatly improved. The existing red brick station was built in the 1950s by the New York Central and architecturally is not bad, but does need to be greatly improved and expanded. It seems to me that on the east side an entirely new waiting room/rest room annex could be built with little trouble, perhaps tripling the size of the existing station. It should have a high floor-to-ceiling height and large windows that flood the waiting room with natural light. It should also have its own entrances to the front taxiway and rear platform. The existing low-level platform should be replaced in part with a high-level platform immediately to the east of the current station building. Given that the line was once double track there is space to lay a 2nd track that could reroute freights around the platform track. The new platform should be covered by a canopy and be heated in the winter time. The station’s pedestrian connections to Main Street and the NFTA Metro Rail should be enhanced thru proper street signage. A pedestrian railroad crossing and sidewalk up to Washington Street could be built just west of the station that would allow passengers to more directly connect with new waterfront development and the Metro Rail. The sidewalk should be heated and covered. Finally purchasing an existing surface parking lot just east to the station could greatly expand parking for use by Amtrak passengers, providing perhaps by about 200 hundred spaces. The parking lot should be secured by being fenced in and under video surveillance. Parking at Buffalo-Depew should also be greatly expanded into the empty land to the east, parallel to the existing platform.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the improvements needed to the existing stations in Buffalo, New York. Improvement to the passenger rail facilities in the Buffalo area is an important goal of the High Speed Rail Empire Corridor Program. NYSDOT has implemented upgrades at the existing rail station at Buffalo-Depew to improve/rehabilitate the parking lot and enhance passenger access to comply with Americans with Disabilities Act requirements. The High Speed Rail Empire Corridor Tier 1 EIS evaluates a range of improvements for the purpose of making decisions on corridor-level service, including service reliability, service frequency, and train speeds. The focus was on utilizing existing stations along the Empire Corridor including the stations at Buffalo-Depew and Buffalo-Exchange Street. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station over the Central Terminal location. Some of the primary reasons for the selection of the downtown site included economic benefits to

the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter **Turon, Benjamin J., Empire State Passenger Association, Empire State Passenger Association**

Comment 0-29-47 In summary 'Alternative 110' provides the best blue print for accelerated intercity passenger service appropriate to the size of our Upstate population and economy and at a financial cost which is within the capability of New York State.

Response Thank you for your comment and support of 110 Alternative. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. Alternative 90B would also provide substantial travel time savings, but would constrain more of the additional trackage within the existing right-of-way than Alternative 110. Based on this, and resulting lower costs and impacts, Alternative 90B has been selected as the Preferred Alternative. The existing station stops on the route would remain in service and the frequency of trains would increase for the western portion of the Empire Corridor from 4 roundtrips west of Albany to 8 roundtrips. Support and interest from the public, relating to Alternative 110, have been considered by FRA and NYSDOT in the selection process for a Preferred Alternative.

Commenter **Turon, Benjamin J., Empire State Passenger Association, Empire State Passenger Association**

Comment 0-29-48 "On the Right Lines? The Limits of Technological Innovation"
On page 191 he writes that "once traffic-generating potential drops below ten million passengers per annum, the new-build option becomes very hard to substantiate." On page 188 he writes that "it seems unlikely that a major new ground transport system such as MAGLEV will really be viable unless it can attract passenger flows of the order of fifty million per annum".
I don't support Alternative 125 because one it skips Schenectady, Utica, and Rome; but primarily because it seems to me that Upstate NY doesn't have the population or economy to support such a construction project, which even after it is completed, Rochester and Buffalo would seem to still be beyond the 3 to 4 hour travel time where HSR can successfully capture a large market-share of combined air-rail intercity travel.

Response Thank you for your comments. Alternative 125 has been dismissed from further consideration in part based on its costs, it is the costliest alternative.

Commenter **Turon, Benjamin J., Empire State Passenger Association, Empire State Passenger Association**

Comment 0-29-49 Alt 110 is in terms of costs and benefits is the most logical choice, the biggest bang for the buck. I think speeds up to 125-mph could be feasible south of Rensselaer to Poughkeepsie with grade crossing upgrades and a FRA waiver, and perhaps on portions of new dedicated 110-mph track should grade separation of significant lengths of the line be accomplished at some future date. But overall a new dedicated third track along the existing is the way to go Albany to Buffalo be it at 90, 110, or 125-mph.

Response Because of the required property acquisition, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance. For these reasons, this alternative was dismissed from further consideration. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional tracks to better segregate passenger and freight rail.

Commenter	Turon, Benjamin J., Empire State Passenger Association, Empire State Passenger Association
Comment 0-29-50	I support the Alternative 110, with one caveat. My caveat is that the State should consider the use of tilting train sets for the new train sets to replace the Am Fleets. I believe the use of tilting trains could significantly cut the travel time by maybe, you know, five, ten minutes between city pairs by going faster around the curves.
Response	Thank you for your comment supporting the 110 Alternative. Alternative 90B would provide substantial travel time savings, but would constrain more of the additional trackage within the existing right-of-way than Alternative 110. Based on this, and resulting lower costs and impacts, Alternative 90B has been selected as the Preferred Alternative. Consideration of the types of locomotives and rolling stock will be part of the second evaluation (Tier 2) to determine the best alternative for that project, or group of projects, that will meet the goals of the program. Use of tilt trains on the route may require further study. The clearances for the tilt train wheel and axle assemblies may not meet the recommended allowances to operate on lines equipped with third rail that the Empire Corridor trains must use on both Metro North Railroad and in Pennsylvania Station, New York.
Commenter	Wierowski, David C., Empire State Passenger Association, NARP, Empire State Passenger Association, NARP
Comment 0-29-51	1. Secure funding to install additional RR bridge over Park Street (west of station) move existing switch west end approach to platform, to west of Park Street. Install high speed switch. Add additional switch to station track to allow 2nd track to be installed on south side of existing raised platform (it is almost ready to go) Extend that track to connect to north platform station track to the east of existing platform. Extend high level platforms, both east and west. This added bridge over Park Street would be asset to both Amtrak and CSX, should CSX decide to reconstruct existing 2 track bridge over park street, they would have a detour if construction occurs.
Response	Thank you for your suggestions and recommendations. Operations in the Syracuse area of the Empire Corridor are being addressed in a separate project by NYSDOT, the Syracuse Congestion Relief Project, that will focus on improving the operation of both freight and passenger trains in the area between Syracuse Station and East Syracuse.
Commenter	Wierowski, David C., Empire State Passenger Association, NARP, Empire State Passenger Association, NARP
Comment 0-29-52	2. For higher speed a third track to be installed at critical locations to allow for faster speeds for Amtrak, and in certain areas where needed, third track installation with super elevation (banked curves) to allow for faster speeds on tight curves thruout system (NYS) improved grade crossing warning with double locked gates, like in England and Europe. Grade crossing elimination where possible.
Response	Thank you for your comment regarding the need for additional tracks on the Empire Corridor High Speed Rail Program. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail, the majority of which consists of dedicated third track, as outlined in Volume 2 of the Tier 1 EIS. Track and infrastructure design will need to conform to Federal Railroad Administration requirements and regulations. Provisions will need to be included in the design to support the safe operation of all trains on the route.
Commenter	Wierowski, David C., Empire State Passenger Association, NARP, Empire State Passenger Association, NARP

Comment
O-29-53 We also, last year, toured England and Europe, and observing some of the characteristics that they have in their rail networks, one of the things that, in comparison and as far as the safety aspect the gentleman that was just behind me spoke about, grade crossings, a lot of grade crossings in England use a method of locking down the approach to the -- to the grade crossing, and there are certain areas in this country that are experimenting with that system of double gates on both sides of the highway that cross the grade crossing at level grade crossings for safety reasons. And this is a big thing. I'm sure you folks have been working on that with CSX because they're the primary corridor owners here, but this would be a great improvement to help out with the -- the warning system on approaching trains. I notice that, in Ohio and Indiana, Norfolk Southern has put in amazing grade crossings with overhead lighting even on the smallest of highways, like, it was unbelievable. So whether or not CSX is going to get together with Amtrak or whatever, the DOT, to do those improvements, that would -- that would help immensely in speed.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program. The High Speed Rail Empire Corridor Tier 1 EIS evaluates a range of corridor-level service improvements for the purpose of making decisions on corridor-level service, including service reliability, service frequency, and train speeds. Chapters 2 and 3 address safety for the existing corridor and the program alternatives, and proposed safety and design measures will be further developed in the Tier 2 assessments. Comments from the public, discussing the safety of the operation of the high speed trains for both grade crossings and along the right of way, have been considered by FRA and NYSDOT in the selection process for the Preferred Alternative.

Commenter **Wierowski, David C., Empire State Passenger Association, NARP, Empire State Passenger Association, NARP**

Comment
O-29-54 Of course, the high speed -- high speed, I would love to see this at 110 miles an hour in my lifetime

Response Thank you for your interest and support of Alternative 110. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. Alternative 90B would also provide substantial travel time savings, but would constrain more of the additional trackage within the existing right-of-way than Alternative 110. Based on this, and resulting lower costs and impacts, Alternative 90B has been selected as the Preferred Alternative.

Commenter **Wierowski, David C., Empire State Passenger Association, NARP, Empire State Passenger Association, NARP**

Comment
O-29-55 It's -- it's one of those things that our in infrastructure here, dealing with a freight railroad, you almost have to start separating, and I really would love to see the top speed here, the 110, to get -- get away in certain corridors, certain areas, get away from the freight road bed because, like he says, the -- the one and a half mile long freight trains that CSX runs around back and forth throughout this country, CSX and Norfolk Southern, BNSF, Union Pacific, the big four, they've put a lot of pressure on that roadbed.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program. The Tier 1 EIS for the High Speed Rail Empire Corridor Program reviews the operation of multiple tracks along the Empire Corridor, including developing specific track diagrams and modeling/simulation of rail operations, to identify the necessary infrastructure projects that will improve travel times and the reliability of service. Alternatives 90B and 110 would restore large sections of third and fourth track, but the Preferred Alternative (Alternative 90B) would constrain more of the additional trackage to the existing right-of-way, substantially reducing costs and impacts.

Commenter **Olson, Milo, Energy Solutions, Energy Solutions**

Comment O-30-1 I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Compromised or limited service on the current freight network may force my company to alter our business operations and begin shipping more products by truck – increasing cost, increasing our environmental footprint and increasing traffic on New York roadways.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail. Specifically in the Tier 1 EIS, Chapters 3 and 4 discuss the positive impacts of the program, with Section 4.3 Regional Population and Employment, and Business Districts, discussing how the program will create employment opportunities and support the labor markets in the regions served by the improved rail service.

Commenter Olson, Milo, Energy Solutions, Energy Solutions

Comment O-30-2 I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight traffic and will reduce travel times between New York City and Niagara Falls by 1½ hours in 2035, compared to the Base Alternative. Alternative 90B would also involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter Ardito, David, Environmental Rail Solutions, Inc., Environmental Rail Solutions, Inc.

Comment O-31-1 I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Environmental Rail Solutions, Inc., the company I represent, relies heavily on the very busy corridor in New York. 85% of our freight business will be greatly impacted and will cause serious delays, delays we cannot afford. We rely 100% on the railroad for our freight business. We are generating over \$15,000,000.00 in freight and the cost would double if we would have to increase the number of rail cars to move our freight to offset the increase in delays

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As discussed above, this alternative would better segregate passenger and freight rail operations and would reduce travel delays for both types of rail. Improvement of passenger rail service, while maintaining freight operations along the Empire Corridor, is one of the goals for the HSR Empire Corridor Program. Minimizing interference with freight rail operations is one of the six performance objectives of the High Speed Rail Empire Corridor Program. The importance of preservation and the improvement of freight rail traffic to the economy of New York State has been a critical factor in the selection of a preferred alternative.

Commenter Ardito, David, Environmental Rail Solutions, Inc., Environmental Rail Solutions, Inc.

Comment O-31-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will reduce travel times between New York City and Niagara Falls by 1½ hours in 2035, compared to the Base Alternative.
Commenter	Elhakim, Diane, Evonik Corporation, Evonik Corporation
Comment O-32-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations. We rely on the existing freight rail network for the efficient, reliable and economical transportation of goods. As a shipper of bulk chemicals, many hazardous in nature, Evonik tries to ship as much as we can on the railroads, as rail has proven to be the safest method of transportation for such shipments. To ship more by truck would mean dangerous chemicals moving on our highways, through our cities, past our schools. The danger of an accident increases with every truck shipment. In addition, for the safety of our plant personnel and customer recipients, there is one loading and unloading for each railcar as opposed to four or possibly five for the same amount of product shipped by truck. Less handling means less risk of spillage and potential injury.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative would better segregate passenger and freight rail operations and would reduce travel delays for both types of rail. .
Commenter	Elhakim, Diane, Evonik Corporation, Evonik Corporation
Comment O-32-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations. They also would impede the ability of the freight rail network to keep pace with and serve the needs of a growing upstate economy.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Elhakim, Diane, Evonik Corporation, Evonik Corporation
Comment O-32-3	I urge the state to maintain current freight service and the capacity for growth by selecting the base alternative.

Response Thank you for your comments on the Tier 1 DEIS and the preference for an alternative that will allow for growth of the freight. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage that will expand capacity on the Empire Corridor.

Commenter **Kuhr, Jim, Director of Brewery Operations & Brewmaster, The Matt Brewing Company Inc., The Matt Brewing Company Inc.**

Comment O-33-1 We urge the state to consider the impact on freight rail operations when selecting an alternative for the High Speed Rail project.
Our company is a brewery in Utica, New York. Our sales are about \$50,000,000 and we employ 125-130 people. Our business is growing and we expect to do a capacity expansion in the next year or two. A key ingredient for our brewery is malt. We use approximately 21,000,000 pounds of grains per year and we receive most of this by rail, accounting for over 70 cars a years. Rail is the most efficient way to transport this quantity of malt and thus it is a key input to our business.
If rail delivery of grains were to become more difficult, expensive or unreliable, we would be forced to receive more grains by truck which would increase costs and cause a cascading effect of increasing our environment footprint and increasing traffic on New York roadways.
Advancing high speed passenger rail at the detriment of freight rail would limit opportunities for business and job growth and would be detrimental to the state economy.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative would better segregate passenger and freight rail operations and would reduce travel delays for both types of rail.

Commenter **Hiser, Lynn, VP of Logistics, Fairmount Minerals, Fairmount Minerals**

Comment O-34-1 As VP of Logistics for Fairmount Minerals, I am very concerned about the proposed high speed rail corridor that could negatively affect business operations. Fairmount Minerals is a major shipper of bulk commodities and we rely on the existing freight rail network for the efficient, reliable and economical transportation of our product.
Compromised or limited service on the current freight network may force Fairmount Minerals to alter our business operations and begin shipping more products by truck – increasing cost, increasing our environmental footprint and increasing traffic on New York roadways. Or worse, force us to do less business in New York thus impacting jobs & tax revenues.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter **Hiser, Lynn, VP of Logistics, Fairmount Minerals, Fairmount Minerals**

Comment O-34-2 I strongly encourage the selection of the base alternative to maintain shippers ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.

Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As outlined above, this alternative would improve both passenger and freight rail capacity and operations.
Commenter	Canine, Rick, President, Federal Maglev, Inc., Federal Maglev, Inc.
Comment O-35-1	<p>On March 30, 2001, the Federal Railroad Administration released their Record of Decision for their Maglev Deployment Program. The Final Programmatic environmental Impact Statement compared these three rail alternatives to automobiles:</p> <ul style="list-style-type: none"> · Accelerail: steel-on-steel, shared freight right-of-way, diesel or electric powered, top speeds 90 to 110 mph. · Bullet Train: steel-on-steel, exclusive right-of-way, electric propulsion, speeds up to 200 mph. · Maglev: no-contact, exclusive guideway, electric propulsion, speeds of 300 mph or more. <p>The FRA determined that Maglev “is not only the preferred alternative from an overall standpoint, but also the preferred alternative from an environmental standpoint.” To reiterate, we were disappointed that this environmentally preferred, advanced ground transportation system was not included in your DEIS. If you are truly interested in protecting the environment in the state of New York, we ask that Maglev be added to the DEIS. We would be willing to provide information about Maglev to the DEIS authors.</p>
Response	Thank you for your comments on the application of Maglev technology on the Empire Corridor. In developing the alternatives in the Tier 1 EIS for the High Speed Rail Empire Corridor Program, very high speed (VHS) alternatives were considered, but were not selected in part because they were considered to be cost-prohibitive. In addition, they would bypass all but four of the existing stations along Empire Corridor West. Moreover, as noted in the Tier 1 FEIS on page 3-8 “alignments beyond the existing railroad corridor would be expected to have greater impacts to the natural and human environment than alternatives that follow the existing railroad corridor.” The Tier 1 EIS builds on using existing railroad infrastructure and would provide interconnectivity with other passenger rail networks in New York State and the Northeast Region.
Commenter	Canine, Rick, President, Federal Maglev, Inc., Federal Maglev, Inc.
Comment O-35-2	<p>I was disappointed though that magnetic levitation (maglev) was not included in the study. There are three unique versions of maglev, all of which use linear electric motors. Our company is a promoter of one version, which uses permanent magnets and goes 300+ mph. We are currently working on a 400+ mile project here in the U.S. similar to yours, so in comparison, your 438 mile project would cost about \$9.6 billion and take 3 years to construct. We are always asked, “How can you do that?”</p> <p>First, our Maglev is always elevated about 20 feet high. When we go 300+ mph, we cannot safely allow anything to get in our way. And we save money by doing this.</p> <p>Second, we do not purchase right-of-way and do not excavate a roadbed. We allow auto traffic to go under the Maglev, we do not divide neighborhoods, communities, or farms, and we mitigate damage to wildlife habitat and ecosystems.</p> <p>Third, our Maglev is electrically powered without overhead wires. It is quiet with no engine or wheel noise, no train horns at crossings, and no vibration of the surrounding landscape.</p>
Response	Thank you for your comments on the Tier 1 DEIS on using Maglev for the High Speed Rail Empire Corridor Program. The five alternatives considered in the Tier 1 EIS build on existing railroad technology and can be supported with existing railroad infrastructure, and, therefore, could provide interconnectivity with other passenger rail networks in New York State and the Northeast Region.
Commenter	Canine, Rick, President, Federal Maglev, Inc., Federal Maglev, Inc.

Comment O-35-3 Your project of 4.3 million passengers annually could be financially feasible without considerable subsidy. Although it was stated in the DEIS numbers, we are appalled that the text of the DEIS did not specifically point that out.

Response Thank you for your analysis of ridership and revenue for the High Speed Rail Empire Corridor Program. The levels of financial support and investment for each of the alternatives are discussed in Chapter 6 of Volume 1 of the Tier 1 EIS. Exhibit 6-9 – Comparative Analysis of Alternatives notes that Alternative 125's subsidy per rider would be \$14, which is three dollars lower than if the Base Alternative were selected.

Commenter Barcelona, Dean, Ferraro Foods, Ferraro Foods

Comment O-36-1 I am concerned that the proposed high speed rail corridor would negatively affect business operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will reduce travel times between New York City and Niagara Falls by 1 ½ hours in 2035, compared to the Base Alternative.

Commenter Barcelona, Dean, Ferraro Foods, Ferraro Foods

Comment O-36-2 I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As outlined above, this alternative would improve both passenger and freight rail capacity and operations.

Commenter Polbos, Andy, Freight, Freight

Comment O-37-1 I am concerned that the proposed high speed rail corridor would negatively affect business operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter Polbos, Andy, Freight, Freight

Comment O-37-2 I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.

Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As outlined above, this alternative would improve both passenger and freight rail capacity and operations.
Commenter	Saunders, Anita, Freight, Freight
Comment O-38-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage that will expand capacity for both passenger and freight rail on the Empire Corridor.
Commenter	Saunders, Anita, Freight, Freight
Comment O-38-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Cook, Austin, Freight, Freight
Comment O-39-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As outlined above, this alternative would improve both passenger and freight rail capacity and operations.
Commenter	Cook, Austin, Freight, Freight
Comment O-39-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles

of additional trackage to better segregate passenger and freight traffic and will reduce travel times between New York City and Niagara Falls by 1½ hours in 2035, compared to the Base Alternative.

Commenter Grimmel, Betty, Freight, Freight

Comment O-40-1 I am concerned that the proposed high speed rail corridor would negatively affect business operations. We rely on the existing freight rail network for the efficient, reliable and economical transportation of goods

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter Grimmel, Betty, Freight, Freight

Comment O-40-2 I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations. They also would impede the ability of the freight rail network to keep pace with and serve the needs of a growing upstate economy.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As outlined above, this alternative would improve both passenger and freight rail capacity and operations.

Commenter Grimmel, Betty, Freight, Freight

Comment O-40-3 I urge the state to maintain current freight service and the capacity for growth by selecting the base alternative.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter Hersh, Bob, Freight, Freight

Comment O-41-1 I am concerned that the proposed high speed rail corridor would negatively affect business operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for

business. As outlined above, the Preferred Alternative, Alternative 90B, would provide additional trackage and would improve both passenger and freight rail capacity and operations.

Commenter **Hersh, Bob, Freight, Freight**

Comment O-41-2 I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage that will expand capacity for both passenger and freight rail on the Empire Corridor.

Commenter **Gooden, Clarence, Freight, Freight**

Comment O-42-1 I am concerned that the proposed high speed rail corridor would negatively affect business operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter **Gooden, Clarence, Freight, Freight**

Comment O-42-2 I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As outlined above, this alternative would improve both passenger and freight rail capacity and operations.

Commenter **Murray, Dan, Freight, Freight**

Comment O-43-1 I am concerned that the proposed high speed rail corridor would negatively affect business operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. As outlined above, the Preferred Alternative, Alternative 90B, would provide additional trackage and would improve both passenger and freight rail capacity and operations.

Commenter	Murray, Dan, Freight, Freight
Comment O-43-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, which I believe will significantly constrain effective and timely freight rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight traffic and will reduce travel times between New York City and Niagara Falls by 1½ hours in 2035, compared to the Base Alternative. Alternative 90B would also involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Kennedy, David, Freight, Freight
Comment O-44-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. As outlined above, the Preferred Alternative, Alternative 90B, would provide additional trackage and would improve both passenger and freight rail capacity and operations.
Commenter	Kennedy, David, Freight, Freight
Comment O-44-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Fortin, Eric, Freight, Freight
Comment O-45-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. As outlined above, the Preferred Alternative, Alternative 90B, would provide additional trackage and would improve both passenger and freight rail capacity and operations.
Commenter	Fortin, Eric, Freight, Freight

Comment O-45-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight traffic and will reduce travel times between New York City and Niagara Falls by 1½ hours in 2035, compared to the Base Alternative. Alternative 90B would also involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Maheras, Greg, Freight, Freight
Comment O-46-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. As outlined above, the Preferred Alternative, Alternative 90B, would provide additional trackage and would improve both passenger and freight rail capacity and operations.
Commenter	Maheras, Greg, Freight, Freight
Comment O-46-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage that will expand capacity for both passenger and freight rail on the Empire Corridor.
Commenter	Cutler, Harris, Freight, Freight
Comment O-47-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Cutler, Harris, Freight, Freight
Comment O-47-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A,

90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As outlined above, this alternative would improve both passenger and freight rail capacity and operations.

Commenter **Gagarin, Jerry, Freight, Freight**

Comment O-48-1 I am concerned that the proposed high speed rail corridor would negatively affect business operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight traffic and will reduce travel times between New York City and Niagara Falls by 1½ hours in 2035, compared to the Base Alternative. Alternative 90B would also involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter **Gagarin, Jerry, Freight, Freight**

Comment O-48-2 I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As outlined above, this alternative would improve both passenger and freight rail capacity and operations.

Commenter **McCreavy, John, Freight, Freight**

Comment O-49-1 I am concerned that the proposed high speed rail corridor would negatively affect business operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage that will expand capacity for both passenger and freight rail on the Empire Corridor.

Commenter **McCreavy, John, Freight, Freight**

Comment O-49-2 I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative

90B as the Preferred Alternative. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight traffic and will reduce travel times between New York City and Niagara Falls by 1½ hours in 2035, compared to the Base Alternative. Alternative 90B would also involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter Basile, Joseph, Freight, Freight

Comment O-50-1 I am concerned that the proposed high speed rail corridor would negatively affect business operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. As outlined above, the Preferred Alternative, Alternative 90B, would improve both passenger and freight rail capacity and operations.

Commenter Basile, Joseph, Freight, Freight

Comment O-50-2 I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage that will expand capacity for both passenger and freight rail on the Empire Corridor.

Commenter Muldrow, Louis, Freight, Freight

Comment O-51-1 I am concerned that the proposed high speed rail corridor would negatively affect business operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter Muldrow, Louis, Freight, Freight

Comment O-51-2 I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of

	additional trackage that will expand capacity for both passenger and freight rail on the Empire Corridor.
Commenter	Popowycz, Michael, Freight, Freight
Comment O-52-1	I urge the state to consider the impact on freight rail operations when selecting an alternative
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Popowycz, Michael, Freight, Freight
Comment O-52-2	In selecting an option, I encourage the state to maintain freight connectivity and the capacity to expand such service in the future by not commingling freight and high speed rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As outlined above, this alternative would improve both passenger and freight rail capacity and operations.
Commenter	Strange, Nick, Freight, Freight
Comment O-53-1	I urge the state to consider the impact on freight rail operations when selecting an alternative
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Strange, Nick, Freight, Freight
Comment O-53-2	I encourage the state to maintain freight connectivity and the capacity to expand such service in the future by not commingling freight and high speed rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As outlined above, this alternative would improve both passenger and freight rail capacity and operations.
Commenter	Stack, Richard, Freight, Freight
Comment O-54-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.

Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight traffic and will reduce travel times between New York City and Niagara Falls by 1½ hours in 2035, compared to the Base Alternative. Alternative 90B would also involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Stack, Richard, Freight, Freight
Comment O-54-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight traffic and will reduce travel times between New York City and Niagara Falls by 1½ hours in 2035, compared to the Base Alternative. Alternative 90B would also involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Giovinazzi, Thomas, Freight, Freight
Comment O-55-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage that will expand capacity for both passenger and freight rail on the Empire Corridor.
Commenter	Giovinazzi, Thomas, Freight, Freight
Comment O-55-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As outlined above, this alternative would improve both passenger and freight rail capacity and operations.
Commenter	Waldeck, Tracey, Freight, Freight
Comment O-56-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire

Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage that will expand capacity for both passenger and freight rail on the Empire Corridor.

Commenter **Waldeck, Tracey, Freight, Freight**

Comment
O-56-2 I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight traffic and will reduce travel times between New York City and Niagara Falls by 1½ hours in 2035, compared to the Base Alternative. Alternative 90B would also involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter **Martin, DelRay, Franklin Storage, Franklin Storage**

Comment
O-57-1 I am concerned that the proposed high speed rail corridor would negatively affect business operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage that will expand capacity for both passenger and freight rail on the Empire Corridor.

Commenter **Martin, DelRay, Franklin Storage, Franklin Storage**

Comment
O-57-2 I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As outlined above, this alternative would improve both passenger and freight rail capacity and operations.

Commenter **Longtin, Lisa, Grain Processing Corporation, Grain Processing Corporation**

Comment
O-58-1 I am concerned that the proposed high speed rail corridor would negatively affect business operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles

	of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Longtin, Lisa, Grain Processing Corporation, Grain Processing Corporation
Comment O-58-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight traffic and will reduce travel times between New York City and Niagara Falls by 1½ hours in 2035, compared to the Base Alternative. Alternative 90B would also involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Bleyl, Steve, Green Plains Renewable Energy, Green Plains Renewable Energy
Comment O-59-1	I urge the state to consider the impact on freight rail operations when selecting an alternative.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Bleyl, Steve, Green Plains Renewable Energy, Green Plains Renewable Energy
Comment O-59-2	In selecting an option, I encourage the state to maintain freight connectivity and the capacity to expand such service in the future by not commingling freight and high speed rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As outlined above, this alternative would improve both passenger and freight rail capacity and operations.
Commenter	Testa, Louis, Hamburg Sud Liner Services, Hamburg Sud Liner Services
Comment O-60-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage that will expand capacity for both passenger and freight rail on the Empire Corridor.
Commenter	Testa, Louis, Hamburg Sud Liner Services, Hamburg Sud Liner Services

Comment O-60-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight traffic and will reduce travel times between New York City and Niagara Falls by 1½ hours in 2035, compared to the Base Alternative. Alternative 90B would also involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Barattini, Thomas, Hapag-Lloyd, Hapag-Lloyd
Comment O-61-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. As outlined above, the Preferred Alternative, Alternative 90B would improve both passenger and freight rail capacity and operations.
Commenter	Barattini, Thomas, Hapag-Lloyd, Hapag-Lloyd
Comment O-61-2	I highly encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage that will expand capacity for both passenger and freight rail on the Empire Corridor.
Commenter	Riccio, Jr., Anthony M., Harlem River Transportation and Distribution Center, Harlem River Transportation and Distribution Center
Comment O-62-1	For the future, rail rights of ways have to be widened to accommodate both freight and passenger service. Having worked in transportation for Municipal Government and the private sector for the past 40 years, I have seen the rail freight industry deteriorate. The notion of having high speed rail and freight service co exist is just plain fantasy. Let's work together to develop a true rail freight plan for the NYS Business community. Politics has no role in this planning. I therefore support the base alternative with the proviso that affirmative action is taken to address the problems discussed above.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the

	least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Reinhard, George, Managing Partner, HGMG Transload, LLC, HGMG Transload, LLC
Comment O-63-1	I urge the state to consider the impact on freight rail operations when selecting an alternative.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Reinhard, George, Managing Partner, HGMG Transload, LLC, HGMG Transload, LLC
Comment O-63-2	In selecting an option, I encourage the state to maintain freight connectivity and the capacity to expand such service in the future by not commingling freight and high speed rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage that will expand capacity for both passenger and freight rail on the Empire Corridor.
Commenter	Douglas, Kirk, Hyundai Intermodal, Hyundai Intermodal
Comment O-64-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. As outlined above, the Preferred Alternative, Alternative 90B, would improve both passenger and freight rail capacity and operations.
Commenter	Douglas, Kirk, Hyundai Intermodal, Hyundai Intermodal
Comment O-64-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for your comments discussing the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will

	involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Haikalis, George, President, Institute for Rational Urban Mobility, Institute for Rational Urban Mobility
Comment O-65-1	IRUM fully supports public investment in incremental passenger and freight rail improvements in the NY-Buffalo Empire Corridor.
Response	Thank you for your support and endorsement of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.
Commenter	Haikalis, George, President, Institute for Rational Urban Mobility, Institute for Rational Urban Mobility
Comment O-65-2	The DEIS provides an important beginning point in identifying the impacts of alternative passenger rail investment strategies, particularly for the Schenectady-Buffalo portion of the corridor. However, the DEIS does not fully address the range of alternatives and impacts that should be considered. Advancing a program of capital investments and service enhancements for both freight and passenger systems could produce significant gains to the upstate economy, which lags far behind the growth enjoyed by the NYC metropolitan area.
Response	Thank you for your comments on the Tier 1 DEIS and on how the program will offer significant economic gains to the region. The Tier 1 EIS – Chapter 3 “Alternatives” presents a full range of the alternatives that were reviewed in Section 3.1 “Alternative Development and Screening” and Exhibit 3-3 “General Elements of the Alternatives.” In developing the alternatives outlined in the Tier 1 EIS, a wide range of options were considered from some that used existing technologies with no gains in maximum operating speeds to others that required dedicated right-of-way’s and electrified operations. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight traffic and will reduce travel times between New York City and Niagara Falls by 1½ hours in 2035, compared to the Base Alternative. Alternative 90B would also involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Haikalis, George, President, Institute for Rational Urban Mobility, Institute for Rational Urban Mobility
Comment O-65-3	It is important to note that a 110 mph maximum speed is already a starting point for all the alternatives considered in the DEIS. Much of the Schenectady-Poughkeepsie segment of the Empire Corridor currently has this top speed. Extending this speed to additional track segments west toward Niagara Falls could be considered as part of a series of incremental upgrades.
Response	Your comment in support of the 110 alternative has been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Because of the required property acquisition, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance. For these reasons, this alternative was dismissed from further consideration.
Commenter	Haikalis, George, President, Institute for Rational Urban Mobility, Institute for Rational Urban Mobility

Comment O-65-4	the DEIS should balance this with other public benefits that would occur if somewhat more frequent and higher performing passenger service were operated.
Response	Thank you for your comments on comparing benefits from the different alternatives with other public benefits. The selection of Alternative 90B as the Preferred Alternative by the FRA and NYSDOT considered service strategies that are discussed in the Tier 1 EIS for each of the alternatives. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will reduce travel times between New York City and Niagara Falls by 1 ½ hours in 2035, compared to the Base Alternative. Alternative 90B, the Preferred Alternative, would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. Unlike the 125 express service, which would bypass existing stations at Schenectady, Amsterdam, Rome, Utica, and Buffalo-Depew, it will improve service to these existing stations.
Commenter	Haikalis, George, President, Institute for Rational Urban Mobility, Institute for Rational Urban Mobility
Comment O-65-5	Instead of expanding track capacity on the existing corridor, some freight trains could be operated on the Southern Tier, using existing freight lines.
Response	Thank you for your comments on expanding the analysis of freight operations to the Southern Tier. The High Speed Rail Empire Corridor Program outlined in the Tier 1 EIS focuses on improvements and alternatives on or near the current Empire Corridor alignment of the rail passenger service between Albany and Niagara Falls, New York. Selection of Alternative 90B as the Preferred Alternative by the FRA and NYSDOT will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Haikalis, George, President, Institute for Rational Urban Mobility, Institute for Rational Urban Mobility
Comment O-65-6	The DEIS should be expanded in an effort to take a make more comprehensive examination of these issues.
Response	Your comments on expanding the Tier 1 EIS to include a more comprehensive review of the issues may be a project beyond the scope of the High Speed Rail Empire Corridor Program. The Tier 1 EIS evaluated a range of alternatives and focused on the alternatives considered in the Tier 1 DEIS. The Tier 1 FEIS and Service Development Plan focused on Alternative 90B, the Preferred Alternative, while the Tier 1 DEIS discussed and reviewed the five alternatives that were considered in the documents.
Commenter	Oberting, Gregory, Interstate Commodities, Interstate Commodities
Comment O-66-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations. We rely on the existing freight rail network for the efficient, reliable and economical transportation of goods.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles

	of additional trackage that will expand capacity for both passenger and freight rail on the Empire Corridor.
Commenter	Oberting, Gregory, Interstate Commodities, Interstate Commodities
Comment O-66-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will reduce travel times between New York City and Niagara Falls by 1 ½ hours in 2035, compared to the Base Alternative.
Commenter	Margiotta, James, J. Margiotta Company, J. Margiotta Company
Comment O-67-1	I urge the state to consider the impact on freight rail operations when selecting an alternative
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Margiotta, James, J. Margiotta Company, J. Margiotta Company
Comment O-67-2	In selecting an option, I encourage the state to maintain freight connectivity and the capacity to expand such service in the future by not commingling freight and high speed rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As outlined above, this alternative would improve both passenger and freight rail capacity and operations.
Commenter	Ashcraft, Jeff, J.B. Hunt Transport, Inc., J.B. Hunt Transport, Inc.
Comment O-68-1	In 2013, we originated and terminated almost 70,000 loads via New York intermodal facilities, with almost half of those loads moving on CSX tracks in the Empire Corridor. And an even larger number of loads passed through New York on their way to and from other points in the Northeast. With such large volume on the rails, we are concerned about the potential commingling of freight and passenger rail services such as being proposed by the State of New York and the FRA.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for

business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage that will expand capacity for both passenger and freight rail on the Empire Corridor. This alternative will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter Ashcraft, Jeff, J.B. Hunt Transport, Inc., J.B. Hunt Transport, Inc.

Comment O-68-2 We urge the State to consider strongly the impact on freight rail operations when selecting one of the five alternatives being proposed. Since greater preference should be given to alternatives with the least impact on freight, the “base” alternative appears to be the best option, at this time.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As outlined above, this alternative would improve both passenger and freight rail capacity and operations.

Commenter Wynne, Daniel, Judge Organization, Judge Organization

Comment O-69-1 I am concerned that the proposed high speed rail corridor would negatively affect business operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter Wynne, Daniel, Judge Organization, Judge Organization

Comment O-69-2 I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As outlined above, this alternative would provide additional trackage and would improve both passenger and freight rail capacity and operations.

Commenter Painting, Joe, Lansing Trade Group, Lansing Trade Group

Comment O-70-1 The proposed commingling of freight traffic and high speed passenger traffic and the required concessions is a tactical error with a far reaching and profoundly negative impact. This would impede the ability of the freight rail network to keep pace with and serve the needs of a growing economy in upstate NY and most of New England for the sake of convenience for what will amount to a small handful of travelers.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote

	economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage that will expand capacity for both passenger and freight rail on the Empire Corridor and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Painting, Joe, Lansing Trade Group, Lansing Trade Group
Comment O-70-2	I urge the state to maintain current freight service and the capacity for growth by selecting the base alternative.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As outlined above, this alternative would provide additional trackage and would improve both passenger and freight rail capacity and operations.
Commenter	Daley, Martin, Founder, Livingston Avenue Bridge Coalition, Livingston Avenue Bridge Coalition
Comment O-71-1	The Livingston Avenue Bridge Coalition and the undersigned organizations represent thousands of New Yorkers committed to seeing the Bike and Pedestrian Walkway on the Livingston Avenue Bridge restored when this bridge is rebuilt or replaced as part of the Empire Corridor project. Although site-specific impacts of the selected program will be determined in Tier 2 evaluations, it is important to set the stage for the future of this critical bicycle and pedestrian connection...
Response	Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge .
Commenter	Daley, Martin, Founder, Livingston Avenue Bridge Coalition, Livingston Avenue Bridge Coalition
Comment O-71-2	...the report should acknowledge the significant local and regional support for the Livingston Avenue Bridge Walkway.
Response	Thank you for your comments on the Livingston Avenue Bridge. The Tier 1 FEIS (Section 7.7) notes the public support for the pedestrian walkway and bicycle path on the bridge in the comments received on the Tier 1 DEIS.
Commenter	Daley, Martin, Founder, Livingston Avenue Bridge Coalition, Livingston Avenue Bridge Coalition
Comment O-71-3	The DEIS should contain general and relevant specific review of all transportation projects in the corridor, as well as a consideration of all activities reasonably foreseeable in each of the geographic areas of the program. The DEIS document should incorporate information based on the planning documents of other federal agencies, and state and local governments, including the studies highlighted below
Response	Thank you for your comments on including a review of all projects in the corridor. The Tier 1 EIS for the High Speed Rail Empire Corridor Program focused on improving passenger rail service between New York City and Niagara Falls. The Tier 1 FEIS considers how it will

relate to other transportation projects in New York State and their environmental impact, including discussion of other related station improvements (Section 2.5.5), cumulative impacts (Section 4.24 and Appendix G.21), and other HSR projects (Appendix E.3.1). Appendix G.1 (Exhibits G-2 and G-3) addresses consistency with state, regional, and local plans. Additional information on NYSDOT High Speed Rail Projects along the Empire Corridor can be found at:

<https://www.dot.ny.gov/empire-corridor>

Commenter	Daley, Martin, Founder, Livingston Avenue Bridge Coalition, Livingston Avenue Bridge Coalition
Comment O-71-4	DEIS should take into consideration that the Livingston Avenue Bridge was added to the Capital District Transportation Committee's Transportation Improvement Program in 2009 in anticipation of ARRA funding contingent on restoring pedestrian and bicycle accommodations across the bridge.
Response	Thank you for your comments on the Livingston Avenue Bridge. The Tier 1 FEIS notes the public support for the pedestrian walkway and bicycle path on the bridge.
Commenter	Daley, Martin, Founder, Livingston Avenue Bridge Coalition, Livingston Avenue Bridge Coalition
Comment O-71-5	page 3-24 of the DIES identifies the specific goals of the "Livingston Avenue Bridge Replacement Project" to "improve safety / reliability, travel time, remove speed / weight restrictions, increase capacity," but does not highlight the additional transportation goal of restoring safe and convenient bicycle and pedestrian access across the bridge as identified in several local and regional transportation studies
Response	Thank you for your comments on the Tier 1 DEIS. The Tier 1 FEIS for the High Speed Rail Empire Corridor Program addresses comments received indicating support for providing pedestrian/bicycle access on the Livingston Avenue Bridge.
Commenter	Daley, Martin, Founder, Livingston Avenue Bridge Coalition, Livingston Avenue Bridge Coalition
Comment O-71-6	we request inclusion of the following in the Tier 1 EIS <ul style="list-style-type: none"> · Acknowledge material from transportation and land-use studies and plans relating to the Livingston Avenue Bridge and Walkway · Acknowledge community and municipal support for the Livingston Avenue Walkway · Conduct a Title VI and Environmental Justice Analysis of the scenarios, specifically identifying potential mitigation measures for Environmental Justice Areas surrounding the Livingston Avenue Bridge · Recognize the 2002 Federal Rail Administration report on Rails with Trails and the report's guidance on potential development of Rail-with-Trail facilities along the Empire Corridor
Response	Thank you for your comments discussing the importance of a bike and walkway on the Livingston Avenue Bridge. The Tier 1 FEIS notes the public support for the pedestrian walkway and bicycle path on the bridge.
Commenter	Daley, Martin, Founder, Livingston Avenue Bridge Coalition, Livingston Avenue Bridge Coalition
Comment O-71-7	I represent a group of organizations called Livingston Avenue Bridge Coalition. We are a coalition. We are a number of different advocacy organizations and groups, like Restore Our Waterfront... We have several studies dating back well over a decade, planning studies done on both sides of the river, including the Albany Comprehensive Plan, the Tech Valley Trails Plan,

which prepared by our regional MPO. The City and County of Rensselaer, City and County of Albany have all invested significant public dollars in preparing planning documents that identify the benefits of the walkway. So that information is out there for the taking and I hope that it's included.

That being said, there were resolutions of support for reestablishing the walkway passed in the City of Albany, Albany County, the City of Rensselaer, Rensselaer County and the Hudson River Valley Greenway and Greenway Conservancy.

Response Thank you for your comments on the importance of the bike and walkway on the Livingston Avenue Bridge. The High Speed Rail Empire Corridor Tier 1 EIS evaluates a range of corridor-level service improvements for the purpose of making decisions on corridor-level service, including service reliability, service frequency, and train speeds. Individual projects, or groups of projects, will undergo a second evaluation (in Tier 2) to determine the best alternative for that project, or group of projects. The Livingston Avenue Bridge (LAB) is currently undergoing a separate and independent evaluation in an Environmental Assessment (EA). NYSDOT seeks public input on the LAB improvements and offers a number of avenues for public input. The Livingston Avenue Bridge Environmental Assessment is examining alternatives, including options with pedestrian/bicycle accommodations

Commenter Daley, Martin, Founder, Livingston Avenue Bridge Coalition, Livingston Avenue Bridge Coalition

Comment 0-71-8 Secondly, I think this is a significant environmental justice issue. And while we have these trains going through the communities, I don't think it's too much to ask that there be a benefit provided to the people that are going to be most affected by these trains going through.

Response Thank you for your comment on the Livingston Avenue Bridge Project. We recognize its importance to the neighborhoods at both ends of the bridge in Albany and Rensselaer.

Commenter Daley, Martin, Founder, Livingston Avenue Bridge Coalition, Livingston Avenue Bridge Coalition

Comment 0-71-9 The last issue in relation to safety and security. Actually, the Federal Rail Administration literally wrote the book on the safety of these facilities and Best Management Practices back in 2002 with a report called "Lessons Learned."
...making sure that the environmental justice issue, the planning issue, the public support and the safety issues are documented in the DEIS as we move forward. We are also looking forward to this bridge. It's a significant bottleneck for the corridor and we are hoping that this can be kind of fast-tracked in that process, given a high priority for replacement.

Response Thank you for your comments on the importance of the Livingston Avenue Bridge to the communities near the bridge, and the support for inclusion of a bike and walkway on the bridge. The Tier 1 FEIS (Section 7.7) notes the public support for the pedestrian walkway and bicycle path on the bridge in the comments received on the Tier 1 DEIS.

Commenter La Rue, Greg, Louis Dreyfus Commodities, Louis Dreyfus Commodities

Comment 0-72-1 I am concerned that the proposed high speed rail corridor would negatively affect business operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increase the attractiveness of the region for business.

The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter La Rue, Greg, Louis Dreyfus Commodities, Louis Dreyfus Commodities

Comment O-72-2 I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter Perry, Kevin, Lowes, Lowes

Comment O-73-1 I am concerned that the proposed high speed rail corridor would negatively affect business operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will reduce travel times between New York City and Niagara Falls by 1½ hours in 2035, compared to the Base Alternative. Alternative 90B would also involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter Perry, Kevin, Lowes, Lowes

Comment O-73-2 I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As outlined above, this alternative would improve both passenger and freight rail capacity and operations.

Commenter Jordan, James, Magnetic Glide, Magnetic Glide

Comment O-74-1 This comment is provided to make the citizens and leadership of New York aware of a better alternative for high speed guided surface transport, called Maglev 2000, which is the 2nd generation superconducting Maglev transport system

Response Thank you for your comments on the application of Maglev technology to the improvement of intercity rail service on the Empire Corridor. In developing the alternatives in the Tier 1 EIS for the High Speed Rail Empire Corridor Program, very high speed (VHS) alternatives were considered, but were not selected in part because they were considered to be cost-prohibitive and would bypass all but four of the existing stations along Empire Corridor West. Moreover, as noted in the Tier 1 FEIS on Page 3-9 "alignments beyond the existing

corridor would be expected to have greater impacts to the natural and human environment than alternatives that follow the existing railroad corridor.” The Tier 1 EIS builds on using existing railroad infrastructure and would provide interconnectivity with other passenger rail networks in New York State and the Northeast Region.

Commenter **Jordan, James, Magnetic Glide, Magnetic Glide**

Comment O-74-2 It would be a serious public policy error to ignore the Maglev alternative as the DEIS is considered by the citizens of New York.

Response Thank you for your comments on the program. As noted above, very high speed alternatives were considered, but were deemed both cost-prohibitive and would involve far greater right-of-way and environmental impacts than the Preferred Alternative 90B. In selecting Alternative 90B as the Preferred Alternative, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts. Alternative 90B would also shorten the trip from New York City to Niagara Falls by 1½ hours. The Tier 1 EIS for the High Speed Rail Empire Corridor Program outlines five alternatives that utilize existing railroad technology. This would continue to allow trains from the Empire Corridor to utilize the tracks of Metro North Railroad and Amtrak to reach Penn Station in New York City. Continued operation of passenger trains to Penn Station in New York City allows the Empire Corridor to be part of a larger network of passenger trains in the Northeast United States.

Commenter **Jordan, James, Magnetic Glide, Magnetic Glide**

Comment O-74-3 We observed that the DEIS did not mention the 2nd generation Maglev. Not considering Maglev is a serious policy error.

Response Thank you for your comments on the benefits of Maglev technology. The Tier 1 EIS for the High Speed Rail Empire Corridor Program discussed the use of railroad locomotives and passenger equipment that can be operated on the existing rail network in New York State and provide connections to the nationwide Amtrak network.

Commenter **Robledo, Joseph, VP Intermodal, Matson Logistics, Matson Logistics**

Comment O-75-1 As a company with significant operations in New York, Matson Logistics appreciates the state’s continued focus on economic development and pro-business efforts, but we are concerned that the proposed high speed rail corridor would negatively affect business operations. In an average month, Matson Logistics ships over 500 containers to/from ports and production and distribution points via the Empire Corridor. We, and many thousands of citizens, rely on the existing freight rail network for the efficient, reliable and economical transportation of goods.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter **Robledo, Joseph, VP Intermodal, Matson Logistics, Matson Logistics**

Comment O-75-2 We encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. We consider selection of the base alternative to be consistent with Governor Cuomo's nationally advertised business-friendly supporting new and expanded manufacturing.

Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As outlined above, this alternative would improve both passenger and freight rail capacity and operations.
Commenter	Robledo, Joseph, VP Intermodal, Matson Logistics, Matson Logistics
Comment O-75-3	Conversely, the proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for your comments on the Tier 1 DEIS alternatives. Alternatives 90A, 90B and 110 alternatives will add trackage to the Empire Corridor that will improve the operation of both freight and passenger trains. Alternative 90A would not provide the same level of transportation benefits as it would not add the same capacity as Alternatives 90B and 110 (which each provide more than 300 miles of additional trackage). Alternatives 90B and 110 would restore large sections of third and fourth track, but Alternative 90B would constrain more of the additional trackage to the existing right-of-way, substantially reducing costs and impacts.
Commenter	Damman, James, President, Mode Transportation LLC, Mode Transportation LLC
Comment O-76-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Damman, James, President, Mode Transportation LLC, Mode Transportation LLC
Comment O-76-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for your comments of the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As outlined above, this alternative would improve both passenger and freight rail capacity and operations.
Commenter	King, Mark, Executive Director, Mohawk Hudson Land Conservancy, Mohawk Hudson Land Conservancy
Comment O-77-1	Reconnecting the City of Albany and the City of Rensselaer via the Livingston Avenue Bridge offers the potential for a significant economic and transportation enhancement for the Capital Region. Ideally, this would be part of a region wide system of bike and walking trails, something that is desperately needed in the Capital District.
Response	Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The

Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge.

Commenter	DiMeo, Steven J., President, Mohawk Valley EDGE (Economic Development Growth Enterprises Corporation), Mohawk Valley EDGE (Economic Development Growth Enterprises Corporation)
Comment O-78-1	With the recent proposal of installing high speed rail, Mohawk Valley EDGE is calling on the State to make the right decision, and once again include Utica as an integral part of that plan.
Response	Thank you for your comments about preserving and offering intercity rail passenger service for the City of Utica, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125, a high-speed railroad on a new alignment, was designed to help cut the distance between Albany and Syracuse by 14 miles. One of the major drawbacks of this route is that it passes to the south of the stations on the current Empire Corridor in the Mohawk Valley between Syracuse and Albany. Therefore, express service would not serve Rome, Utica, Amsterdam, and Schenectady. The Preferred Alternative, Alternative 90B, was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance. As discussed in Chapter 3 of the Tier 1 FEIS, the Preferred Alternative would increase service to Utica.
Commenter	DiMeo, Steven J., President, Mohawk Valley EDGE (Economic Development Growth Enterprises Corporation), Mohawk Valley EDGE (Economic Development Growth Enterprises Corporation)
Comment O-78-2	Mohawk Valley EDGE respectfully submits its full support of the construction of high speed rail in New York State. EDGE also feels that any option that does not include Utica as a hub and stop along that proposed line is indefensible from both an economic and transportation planning perspective. Therefore, it is our opinion that any plans to construct high speed rail in New York State must include Utica as a hub and stop.
Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program and the importance of Utica on the route. Your comment has been considered in the selection of Alternative 90B as the Preferred Alternative for the reasons outlined above.
Commenter	Galioto, Frank, Murex, Murex
Comment O-79-1	...we are concerned that any changes to the rail corridor would negatively impact our logistics and our customers logistics.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Galioto, Frank, Murex, Murex
Comment O-79-2	We urge the state to maintain current freight corridor structure by selecting the base alternative.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative

	90B as the Preferred Alternative. As outlined above, this alternative would improve both passenger and freight rail capacity and operations.
Commenter	Szaloky, Joseph, Murphy-Brown LLC, Murphy-Brown LLC
Comment O-80-1	I'd like to urge you to consider our needs before compromising those qualities with the proposal to share lines between passenger and freight rail carriers.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage that will expand capacity for both passenger and freight rail on the Empire Corridor.
Commenter	Szaloky, Joseph, Murphy-Brown LLC, Murphy-Brown LLC
Comment O-80-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight traffic and will reduce travel times between New York City and Niagara Falls by 1½ hours in 2035, compared to the Base Alternative. Alternative 90B would also involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Wells, James, National Lime & Stone Company, National Lime & Stone Company
Comment O-81-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage that will expand capacity for both passenger and freight rail on the Empire Corridor.
Commenter	Wells, James, National Lime & Stone Company, National Lime & Stone Company
Comment O-81-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. The Preferred Alternative will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter	Weber, John V., Utica and Mohawk Valley Chapter of the National Railway Historical Society, Utica and Mohawk Valley Chapter of the National Railway Historical Society
Comment O-82-1	<p>...I'm in favor of pursuing Alternative 110 for the following reasons:</p> <ul style="list-style-type: none"> - Alternatives 90A & 90B support only a small maximum speed improvement over current 79 mph operation, and would not alleviate to a great degree interference with freight operations. - Alternative 125 cuts out Central New York, specifically Utica and Rome, from high speed service at a time when they are poised to become greater centers for new technology (nanotechnology, drone testing, functions at Griffiss Business & Technology Park).
Response	Your comment in support of the 110 Alternative has been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternatives 90B and 110 would restore large sections of third and fourth track, but the Preferred Alternative (Alternative 90B) would constrain more of the additional trackage to the existing right-of-way, substantially reducing costs and impacts.
Commenter	Weber, John V., Utica and Mohawk Valley Chapter of the National Railway Historical Society, Utica and Mohawk Valley Chapter of the National Railway Historical Society
Comment O-82-2	what I would like to see is the addition of dedicated passenger track as in Alternative 110 with schedules and platform configurations at Rochester, Syracuse, Albany and Schenectady allowing easy and timely passenger transfer between high speed trains and lower-average-speed trains that would serve Utica, Rome and any other Central New York communities
Response	Thank you for your comments on the Tier 1 DEIS and on the scheduling of the future train service. The 90B and 110 Alternatives include the installation of additional main tracks to support passenger train operations on the Empire Corridor, but the Preferred Alternative (Alternative 90B) would constrain more of the additional trackage to the existing right-of-way, substantially reducing costs and impacts. The Service Development Plan component of the Tier 1 FEIS for the High Speed Rail Empire Corridor Program addresses scheduling, service patterns, and opportunities for connections at stations along the Empire Corridor.
Commenter	Lens, Harry, Vice President, Utica and Mohawk Valley Chapter of the National Railway Historical Society, Utica and Mohawk Valley Chapter of the National Railway Historical Society
Comment O-82-3	<p>My name is Harry Lens and I'm the Vice President of the Utica Mohawk Valley Chapter of The National Railway Historical Society.</p> <p>The Utica and Mohawk Valley Chapter of the National Railway Historical Society is a non-profit historical society. It is committed to the preservation of railroad history and promotion of railroad transportation. The chapter endorses the DEIS 110 miles per hour alternative option. This option provides for increased and improved service for all corridor stations. Utica and the Mohawk Valley must be an integral part of the New York State railroad transportation plan. We do not approve options that bypass Utica in the Mohawk Valley. Our society is based in Utica.</p>
Response	Thank you for your comments in support of the 110 Alternative. Your comments on preserving and offering intercity rail passenger service for the City of Utica have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125, a high-speed railroad on a new alignment, was designed to help cut the distance between Albany and Syracuse by 14 miles. One of the major drawbacks of this route is that it passes to the south of the stations on the current Empire Corridor in the Mohawk Valley between Syracuse and Albany and would not serve Rome, Utica, Amsterdam, and Schenectady. The Preferred Alternative, Alternative 90B, was selected over Alternative 125, based on its substantially lower costs, impacts, and its

	performance. As discussed in Chapter 3 of the Tier 1 FEIS, the Preferred Alternative would increase service to Utica.
Commenter	Lens, Harry, Vice President, Utica and Mohawk Valley Chapter of the National Railway Historical Society, Utica and Mohawk Valley Chapter of the National Railway Historical Society
Comment O-82-4	We do have some concerns of the area surrounding Utica Station. As you know, Bagg's Square is a historic district. Many of these buildings are register eligible including The New York Central Tower 30 at the eastside of the platforms. This tower is very significant as there are very few still surviving in New York State. I believe the count is three, and that is one of the three survivors. There are many buildings in this area that are on the register including this station.
Response	Thank you for your comments on the importance of preserving historical sites along the Empire Corridor. In selecting routes and defining projects for the High Speed Rail Empire Corridor Program, the FRA and NYSDOT have recognized the importance of preserving and supporting historical structures and facilities along the Empire Corridor. Section 4.15 of the Tier 1 FEIS addresses the potential for impacts on historic resources.
Commenter	Lens, Harry, Vice President, Utica and Mohawk Valley Chapter of the National Railway Historical Society, Utica and Mohawk Valley Chapter of the National Railway Historical Society
Comment O-82-5	Also, it appears that the Adirondack Scenic Railway will be impacted by the construction of the station platforms. Although the Adirondack Scenic Railway is a separate non-profit society, we support their goals. Please minimize this disruption due to the operations of the new construction of the platforms.
Response	Thank you for your comments on the need to consider impacts to the Adirondack Scenic Railway at Utica. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will reduce travel times between New York City and Niagara Falls by 1 ½ hours in 2035, compared to the Base Alternative. Alternative 90B, the Preferred Alternative, would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. Unlike the 125 express service, which would bypass existing stations at Schenectady, Amsterdam, Rome, Utica, and Buffalo-Depew, it will improve service to these existing stations. Improvements in the Utica area considered accommodating continued service for the Adirondack Scenic Railway.
Commenter	Preston, Doug, President, Utica and Mohawk Valley Chapter of the National Railway Historical Society, Utica and Mohawk Valley Chapter of the National Railway Historical Society
Comment O-82-6	I'm VERY DISAPPOINTED not to see an easel board concerning Utica!!! I heard an explanation, but I'm still disappointed.
Response	Thank you for your comments about preserving and offering intercity rail passenger service for the City of Utica, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was designed to help cut the distance between Albany and Syracuse by 14 miles, but one of the major drawbacks of this route is that it passes to the south of the stations on the current Empire Corridor in the Mohawk Valley between Syracuse and Albany. Therefore, it would not serve Rome, Utica, Amsterdam and Schenectady. The Preferred Alternative, Alternative 90B, was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance. As discussed in Chapter 3 of the Tier 1 FEIS, the Preferred Alternative would increase service to Utica.

Commenter	Preston, Doug, President, Utica and Mohawk Valley Chapter of the National Railway Historical Society, Utica and Mohawk Valley Chapter of the National Railway Historical Society
Comment O-82-7	Some of the Alternatives tout raising the average speed from NY City to Niagara Falls to 63 mph. Impressive until one considers that about 60 years ago the New York Central ran the all-pullman “20th Century Limited” between New York (Grand Central Terminal) and Chicago (LaSalle Street Station – 960 miles, average speed 60 mph) in 15½ hours, pulled by first-generation diesels and, until 1953, sometimes by steam locomotives. I do acknowledge that the NYC was a 4-track railroad back then, with 2 dedicated passenger tracks (all on jointed rail BTW). Plus automatic train stop, which was later removed.
Response	Thank you for your comments on the Tier 1 DEIS, which were considered as part of the public review process. In selecting Alternative 90B as the Preferred Alternative for the High Speed Rail Empire Corridor Program, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts. Alternative 90B would also shorten the trip from New York City to Niagara Falls by 1½ hours. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Preston, Doug, President, Utica and Mohawk Valley Chapter of the National Railway Historical Society, Utica and Mohawk Valley Chapter of the National Railway Historical Society
Comment O-82-8	Concerning the reconfiguration of the Utica station in the Alternative 90B/110 schematics, I trust the powers-that-be would replace the Adirondack Scenic RR tracks displaced by the new Amtrak tracks. And since the “new” passenger platforms are to be isolated from freights on Tracks 2 & 1, it would seem possible to build new umbrella sheds on the passenger platforms: for passenger comfort and safety in inclement weather, and as a partial restoration of the historic facilities that once existed (six island platforms, each with toaches on both sides)
Response	Thank you for your comment discussing the configuration of tracks at Utica. The High Speed Rail Empire Corridor Tier 1 EIS evaluates a range of corridor-level service improvements for the purpose of making decisions on corridor-level service, including service reliability, service frequency, and train speeds. Individual projects, or groups of projects, will undergo a second evaluation (called Tier 2) to determine the best alternative for that project, or group of projects. Further evaluation of the facilities and track arrangements at Utica, would be part of the Tier 2 review for the improvement of the track arrangement at Utica.
Commenter	Preston, Doug, President, Utica and Mohawk Valley Chapter of the National Railway Historical Society, Utica and Mohawk Valley Chapter of the National Railway Historical Society
Comment O-82-9	My comment just has to do with descriptions of the different communities, different stations along the way like volume one that were talked about Albany and Syracuse, and Syracuse, the big paragraph talked about it being the commercial and cultural hub of Central New York and the center of education, and I don't specifically remember if it was mentioned, Syracuse University, my alma mater as I say, but here in Utica where I live and I worked in this station in different ways, we see students go through here from to Utica College, Mohawk Valley Community College, Herkimer County Community College, State University College Utica/Rome, Hamilton College out in Clinton and even Colgate University

down in Hamilton, New York and the documentation is that you take shuttles, the shuttle vans from Colgate and Hamilton and, of course, obviously, the kids wear backpacks and jackets and all that. This station, the busiest travel day is the day before Thanksgiving or right around Thanksgiving and it's like students all here so we don't have Syracuse University, but when you start putting these other institutions together, student travel is a big part.

Response Thank you for your comments in support of the High Speed Rail Empire Corridor Program and on the importance of Utica on the route. Your comment have been considered by the FRA and NYSDOT in their selection of Alternative 90B as the Preferred Alternative. As discussed in Chapter 3 of the Tier 1 FEIS, the Preferred Alternative would increase service to Utica.

Commenter **Preston/Lens, Utica and Mohawk Valley Chapter of the National Railway Historical Society, Utica and Mohawk Valley Chapter of the National Railway Historical Society**

Comment 0-82-10 The Utica and Mohawk Valley Chapter of the National Railway Historical Society is a non-profit, educational/historical society. It is committed to the preservation of railroad history and the promotion of railroad transportation. The Chapter endorses the DEIS 110 miles per hour Alternative Option. This option provides for increased and improved service for all corridor stations. Utica and the Mohawk valley must be an integral part of the New York State's Rail Transportation Plan.

Response Thank you for your comments in support of the 110 Alternative. Alternative 90B, the Preferred Alternative, would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. Moreover, Alternative 90B would have fewer environmental impacts than Alternative 110. Alternative 90B would have land use impacts in nine areas in six counties, compared to 53 areas in eight counties with Alternative 110.

Thank you for your comments about preserving and offering intercity rail passenger service for the City of Utica, which were considered by the FRA and NYSDOT in the selection of the Preferred Alternative. Alternative 90B will provide improvements in service to currently served cities, such as Utica. One of the drawbacks of Alternative 125 is that express service would not be directly provided to Niagara Falls, Rome, Utica, Amsterdam, and Schenectady.

Commenter **Preston/Lens, Utica and Mohawk Valley Chapter of the National Railway Historical Society, Utica and Mohawk Valley Chapter of the National Railway Historical Society**

Comment 0-82-11 Our society is based in Utica and has some concerns in the area immediately surrounding Utica Union Station. As you know, Bagg's Square area is a historical district. Many buildings are register eligible including the New York Central Railroad Tower 30 at the east side of the station platforms. This tower is historically significant because there are few remaining in New York State. Please try to keep Tower 30 intact with the future construction.

Response Thank you for your comments on the importance of preserving historical sites along the Empire Corridor. In selecting the Preferred Alternative for the High Speed Rail Empire Corridor Program, the FRA and NYSDOT considered the importance of preserving and supporting historical structures and facilities along the Empire Corridor. Alternative 90B would involve less right-of-way and environmental impacts than Alternatives 110 and 125, as described above. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Because of the required property acquisition, Alternative

	110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance.
Commenter	Preston/Lens, Utica and Mohawk Valley Chapter of the National Railway Historical Society, Utica and Mohawk Valley Chapter of the National Railway Historical Society
Comment O-82-12	Also it appears the Adirondack Scenic Railroad will be impacted by the construction of new station platforms. Although the Adirondack Scenic Railroad is a separate non-profit society, we support their goals. Please minimize the disruption to their operations at Utica.
Response	Thank you for your comments on the need to consider impacts to the Adirondack Scenic Railway at Utica. The program of improvements under the Preferred Alternative (Alternative 90B) will be further developed in Tier 2. Improvements in the Utica area considered accommodating continued service for the Adirondack Scenic Railway. The Service Development Plan addresses maintaining and improving intermodal connection between intercity passenger trains on the Empire Corridor with other railroads including the Adirondack Scenic Railway.
Commenter	Hague, P.E., John Maxfield, New York Central System Historical Society, Inc. 4072, New York Central System Historical Society, Inc. 4072
Comment O-83-1	The 20CL compared not too unfavorably to your Alternatives 90A, 908 and 110. Its history of great performance over many decades, including links to the west coast, should be included as a model for the future in the final EIS.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will reduce travel times between New York City and Niagara Falls by 1 ½ hours in 2035, compared to the Base Alternative. Alternative 90B, the Preferred Alternative, would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. Unlike the 125 express service, which would bypass existing stations at Schenectady, Amsterdam, Rome, Utica, and Buffalo-Depew, it will improve service to these existing stations.
Commenter	Hague, P.E., John Maxfield, New York Central System Historical Society, Inc. 4072, New York Central System Historical Society, Inc. 4072
Comment O-83-2	Buffalo Central Terminal (opened 1929), located at the junction of the main line and the NY Central Belt Line, about halfway between the Depew and Exchange Street stations, should be considered for re-use as the Buffalo station.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, The focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily acceptable for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station over the Central Terminal location. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter	Martin, Richard J., Associate Executive Director, New York State Bar Association, New York State Bar Association
Comment O-84-1	I am writing in support of the so-called modified high speed rail proposal that is capable of speeds of 110 miles per hour.
Response	Your comment in support of the 110 Alternative has been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B, the Preferred Alternative, would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Because of the required property acquisition, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance.
Commenter	Schiffer, William, Newhaven Distribution Services, Newhaven Distribution Services
Comment O-85-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Schiffer, William, Newhaven Distribution Services, Newhaven Distribution Services
Comment O-85-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage that will expand capacity for both passenger and freight rail on the Empire Corridor.
Commenter	Brown, Ike, President, NFI Intermodal, NFI Intermodal
Comment O-86-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight traffic and will reduce

travel times between New York City and Niagara Falls by 1½ hours in 2035, compared to the Base Alternative. Alternative 90B would also involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter **Brown, Ike, President, NFI Intermodal, NFI Intermodal**

Comment
O-86-2 I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As outlined above, this alternative would improve both passenger and freight rail capacity and operations.

Commenter **Jones, Michael, North Dakota Mill & Elevator Association, North Dakota Mill & Elevator Association**

Comment
O-87-1 I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter **Butts, Joe, NOVA Chemicals, NOVA Chemicals**

Comment
O-88-1 We rely on the existing freight rail network for the efficient, reliable and economical transportation of goods and encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage that will expand capacity for both passenger and freight rail on the Empire Corridor.

Commenter **Long, Raymond, NRG Energy, NRG Energy**

Comment
O-89-1 I urge the state to consider the impact on freight rail operations when selecting an alternative.

Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Long, Raymond, NRG Energy, NRG Energy
Comment O-89-2	In selecting an option, I encourage the state to maintain freight connectivity and the capacity to expand such service in the future by not commingling freight and high speed rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As outlined above, this alternative would improve both passenger and freight rail capacity and operations.
Commenter	Roberson, Rob, Corporate Logistics Manager, Nucor Corporation, Nucor Corporation
Comment O-90-1	I urge the state to consider the impact on freight rail operations when selecting an alternative, not only with respect to how such a decision may directly affect freight rail operations but also the indirect affect such a decision may have on the safety of the state's rail system and roadways.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight traffic and will reduce travel times between New York City and Niagara Falls by 1½ hours in 2035, compared to the Base Alternative. Alternative 90B would also involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Roberson, Rob, Corporate Logistics Manager, Nucor Corporation, Nucor Corporation
Comment O-90-2	The state should maintain freight connectivity and the capacity to expand such service in the future by not commingling freight and high speed rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage that will expand capacity for both passenger and freight rail on the Empire Corridor.
Commenter	Hatfield, Jane, Owensboro Riverport, Owensboro Riverport
Comment O-91-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote

economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter **Hatfield, Jane, Owensboro Riverport, Owensboro Riverport**

Comment 0-91-2 I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As outlined above, this alternative would improve both passenger and freight rail capacity and operations.

Commenter **Dropkin, Robin, Executive Director, Parks & Trails New York (PTNY), Parks & Trails New York (PTNY)**

Comment 0-92-1 Performance objectives must be expanded to ensure full consideration of all types of multi-modal connections, including bicycling and walking
A new objective should be added: "Foster multi-modal travel connections, including bicycling and walking."

Response Thank you for your comments on the Tier 1 DEIS. Transportation-related goals include: "increase travel choices by providing additional commuting and travel options for residents and workers." Although multi-modal connections and pedestrian access are considerations in station design, the broader focus for the program centers on intercity passenger rail service. The purpose of the Tier 1 EIS for the High Speed Rail Empire Corridor Program is to improve intercity passenger service in New York State through infrastructure investments and operational improvements, which will enhance the attractiveness of the service to existing and potential riders. Improvements in service include tangible and measurable gains in operational reliability and travel time reductions. The Tier 1 EIS focuses on selecting a Preferred Alternative for improving passenger rail service on the Empire Corridor.

Commenter **Dropkin, Robin, Executive Director, Parks & Trails New York (PTNY), Parks & Trails New York (PTNY)**

Comment 0-92-2 the Tier 1 EIS must include a specific discussion of the following:

- Facilities for cyclists (bike racks, lockers, even showers) at stations
- Integration of station design with the surrounding street network to allow for safe access to the station by pedestrians and cyclists
- Accommodation of walking and bicycling at locations where the chosen alternative requires that bridges or other infrastructure be modified or replaced

Response Thank you for your comments on the issues to be addressed in the Tier 1 EIS. The tiered EIS process for the High Speed Rail Empire Corridor Program is a two-tier process, and currently Tier 1 selects a Preferred Alternative. Stations and supporting facilities can be either advanced as independent, separate projects (as many of the stations along the route have been recently upgraded or reconstructed) or can be addressed later in Tier 2, as individual projects are identified and reviewed. In the second stage of the process, the opportunities for integrating the needs accommodating bicycles and cyclists can be included in station projects.

Commenter **Dropkin, Robin, Executive Director, Parks & Trails New York (PTNY), Parks & Trails New York (PTNY)**

Comment 0-92-3	We specifically request that a bicycle and pedestrian walkway be restored in conjunction with the Livingston Avenue Bridge replacement.
Response	Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge .
Commenter	Dropkin, Robin, Executive Director, Parks & Trails New York (PTNY), Parks & Trails New York (PTNY)
Comment 0-92-4	Transportation-related goals should recognize the importance of high speed rail to supporting tourism in New York State
Response	Thank you for your comments on the importance of rail in promoting tourism in New York State. The transportation-related goals of the High Speed Rail Empire Corridor Program, as outlined in Chapter 1, include “contribute to economic revitalization by accommodating forecasted growth in population and employment and corridor rail freight operations and by accommodating and attracting additional tourists.”
Commenter	Dropkin, Robin, Executive Director, Parks & Trails New York (PTNY), Parks & Trails New York (PTNY)
Comment 0-92-5	The NYSDOT transportation-related program goals mentioned on page 1-12 and 6-1 should be revised as follows: <ul style="list-style-type: none"> • Increase travel choices and improve quality of life by providing additional commuting and travel options for residents, workers, AND TOURISTS • Contribute to economic revitalization by accommodating forecasted growth in population and employment and corridor rail freight operations and by ATTRACTING ADDITIONAL TOURISTS.
Response	Thank you for your comments on revising the document. As described above, the Tier 1 EIS has been revised to include the goal of accommodating tourists and tourism.
Commenter	Dropkin, Robin, Executive Director, Parks & Trails New York (PTNY), Parks & Trails New York (PTNY)
Comment 0-92-6	Investment in new rolling stock must include cars to accommodate bicycles. Any rolling stock purchased to serve the High Speed Rail Empire Corridor Program must include passenger cars designed with racks to accommodate bicycles (the option we prefer) and/or baggage cars fitted with bicycle racks.
Response	Currently, bicycles can be accommodated on the Empire Corridor, but require separate ticketing. It is anticipated that equipment requirements would continue to incorporate bicycle access.
Commenter	Dropkin, Robin, Executive Director, Parks & Trails New York (PTNY), Parks & Trails New York (PTNY)
Comment 0-92-7	Built Alternative Reviews must include impacts to the state's trail systems in addition to national, state, county, and municipal parks and recreation areas and federally and state-designated heritage and historic sites The text of Existing Conditions: Parks and Recreational Areas, page 4-262, does not include mention of any of the trail systems within the Empire Corridor with the exception of the

Erie Canalway Trail. While the document notes the Glenville Bike Trail (page 4-277), this is actually a section of the Erie Canal way Trail.

On page 4-261, the DEIS states that "Publicly owned recreation areas were defined to include publicly owned golf courses (but not "public" golf courses that are open to the public, but privately owned). There is no mention of publicly-owned trail systems. We recommend consultation with the MPOs and NYSDOT bicycle and pedestrian coordinators to ensure that, if applicable, New York's trails are recognized as recreational resources that should be included in any evaluation of the High Speed Rail Empire Corridor Program impacts.

Response The Tier 1 analysis of conceptual corridors identified potential impacts and focused on GIS-mapped parks and recreation areas. Due to the size and scale of the trails and bikeways, the detailed analysis of impacts to these recreational corridors would be evaluated as part of the Tier 2 analysis, when more detailed designs on component projects are advanced and developed.

Commenter **Dropkin, Robin, Executive Director, Parks & Trails New York (PTNY), Parks & Trails New York (PTNY)**

Comment 0-92-8 Built Alternative Reviews must include impacts to historic as well as present Erie Canal alignments and planned as well as existing trail routes
In addressing potential impacts within the Area of Potential Effect for the five alternatives, consideration must be given to the broad corridor-level issue of impacts to planned as well as existing trail networks and to the historic as well as the present Erie Canal alignments. In evaluating alternative and potential effects, care must be taken to specifically ask local and state officials about planned or proposed trail projects before deciding there is no impact.

Response Thank you for your comments on the need for Built Alternative reviews in the future. The State Historic Preservation Office has been included in the Tier 1 reviews and will be consulted, as appropriate, in Tier 2 as part of constructability reviews for supporting projects. Tier 2 reviews will need to consider potential for impacts on recreational trails and projects.

Commenter **Dropkin, Robin, Executive Director, Parks & Trails New York (PTNY), Parks & Trails New York (PTNY)**

Comment 0-92-9 Use of former track bed should be preserved for potential Erie Canalway Trail and other trail network development
In those locations where former track bed is not utilized, we request that it not be lost to non-transportation purposes but instead be preserved as future rail, trail, or rail with trail projects.

Response Thank you for comment on the possible future preservation of the right of way for rail trail or trail use. Currently, it is not anticipated that the existing right of way used by CSX Transportation for their freight train operations will be retired and available for other uses.

Commenter **Dropkin, Robin, Executive Director, Parks & Trails New York (PTNY), Parks & Trails New York (PTNY)**

Comment 0-92-10 Characterization of the New York State Canalway Trail System should be revised to reflect the Canalway Trail System's full extent
The paragraph should be revised to read as follows: "The 524- mile New York State Canalway Trail System is comprised of a network of four major recreational trails across upstate New York: the Erie Canalway Trail, Champlain Canalway Trail, Cayuga Seneca Canalway Trail, and Oswego Canalway Trail. Much of the trail system is located adjacent to the waterways of the New York State Canal System or follow remnants of the historic

original canals of the early 1800s that preceded today's working Canal System. Presently, more than 300 miles of the Canalway Trail System are open to the public: 277 miles of the Erie Canalway Trail, including the 36-mile Old Erie Canal State Park Trail in Central New York; six miles of the Cayuga-Seneca Canalway Trail; 17 miles of the Champlain Canalway Trail; and two miles of the Oswego Canalway Trail. Portions of this canal system are nationally or state-designated heritage areas, parks, and trails."

Response Thank you for your comments and suggestions to revise the Tier 1 EIS's characterization of the trail system, and the document's description of the New York State Canalway Trail System has been revised.

Commenter **Rinaldi, Philip L., Chief Executive Officer, Philadelphia Energy Solutions, Philadelphia Energy Solutions**

Comment I am concerned that the proposed high speed rail corridor would negatively affect business operations. We rely on the existing freight rail network for the efficient, reliable and economical transportation of goods.

0-93-1 I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations. They also would impede the ability of the freight rail network to keep pace with and serve the needs of a growing upstate economy. I urge the state to maintain current freight service and the capacity for growth by selecting the base alternative. An optimized freight rail network will foster economic development, sustain jobs and help job growth as well as position existing and future New York businesses for success.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight traffic and will reduce travel times between New York City and Niagara Falls by 1½ hours in 2035, compared to the Base Alternative. Alternative 90B would also involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter **Steubing, Sandy, Spokesperson, People of Albany United for Safe Energy, People of Albany United for Safe Energy**

Comment I'm concerned that high speed passenger rail will be stalled due to the take over of oil by rail. I've also spoken to a few regular rail travelers who are shying away from taking the trains today b/c they don't wish to be near the oil trains.
0-94-1 The solution would be a massive switch to renewable sources of energy.

Response Thank you for your comments on operation of the high speed rail passenger trains and other train operating along the Empire Corridor. The purpose of the High Speed Rail Empire Corridor Program is to introduce higher passenger train speeds on the Empire Corridor and to improve reliability, travel times, levels of train service and passenger amenities. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail, which should provide better separation of cargo trains from passenger rail. Equipment needs (including rolling stock) will be further addressed in advancing the Preferred Alternative in the Tier 2 assessments.

Commenter **Steubing, Sandy, Spokesperson, People of Albany United for Safe Energy, People of Albany United for Safe Energy**

Comment O-94-2 I'm a spokesperson for PAUSE, People of Albany United for Safe Energy. I'd like to double down on what Mr. Calsolaro and Mr. Daily and others have said about the Livingston Street Bridge, which I would love to be able to walk over in my lifetime.

Response Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge.

Commenter Clark, Sharon, Perdue AgriBusiness, Perdue AgriBusiness

Comment O-95-1 I urge the state to consider the impact on freight rail operations when selecting an alternative.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter Clark, Sharon, Perdue AgriBusiness, Perdue AgriBusiness

Comment O-95-2 In selecting an option, I encourage the state to maintain freight connectivity and the capacity to expand such service in the future by not commingling freight and high speed rail operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage that will expand capacity for both passenger and freight rail on the Empire Corridor.

Commenter Spieckermann, Phil, POET Ethanol Products, POET Ethanol Products

Comment O-96-1 I am concerned that the proposed high speed rail corridor would negatively affect business operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will reduce travel times between New York City and Niagara Falls by 1 ½ hours in 2035, compared to the Base Alternative.

Commenter Spieckermann, Phil, POET Ethanol Products, POET Ethanol Products

Comment O-96-2 I urge the state to consider the impact on freight rail operations when selecting an alternative.

Response	Thanks you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Spieckermann, Phil, POET Ethanol Products, POET Ethanol Products
Comment O-96-3	In selecting an option, I encourage the state to maintain freight connectivity and the capacity to expand such service in the future by not commingling freight and high speed rail operations.
Response	Thank you for your comments on the Tier 1 DEIS. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage that will expand capacity for both passenger and freight rail on the Empire Corridor and will improve the operation of both freight and passenger trains.
Commenter	Von Dohlen, Gerard, Port Newark Refrigerated Warehouse, Port Newark Refrigerated Warehouse
Comment O-97-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. As outlined above, the additional trackage provided by the Preferred Alternative, Alternative 90B, would improve both passenger and freight rail capacity and operations.
Commenter	Von Dohlen, Gerard, Port Newark Refrigerated Warehouse, Port Newark Refrigerated Warehouse
Comment O-97-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Hayes, Ken, PSL North America, PSL North America
Comment O-98-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles

	of additional trackage that will expand capacity for both passenger and freight rail on the Empire Corridor.
Commenter	Hayes, Ken, PSL North America, PSL North America
Comment O-98-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As outlined above, the additional trackage provided by this alternative would improve both passenger and freight rail capacity and operations.
Commenter	Jordan, Jacob, Executive Director, Queen City Rail Trails, Queen City Rail Trails
Comment O-99-1	Is it possible, while building the 90A/B and 110 improvements, to lay the literal foundation for 125 along the existing corridor?
Response	Thank you for your comments on the possible future ability to build the 125 Alternative from the infrastructure for 90B or 110 Alternatives. Because of the required property acquisition, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance. In selecting Alternative 90B as the Preferred Alternative for the High Speed Rail Empire Corridor Program, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts. Alternative 90B would also shorten the trip from New York City to Niagara Falls by 1½ hours. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative). A substantial drawback of Alternative 125 is that it would take the longest time to construct and would be the costliest alternative. Alternative 90B would involve less right-of-way and environmental impacts than Alternatives 110 and 125, as described above.
Commenter	Jordan, Jacob, Executive Director, Queen City Rail Trails, Queen City Rail Trails
Comment O-99-2	I am Jacob Jordan, Executive Director of Queen City Rail Trails. I mean I definitely think that whatever investment happens for dedicated separate right of ways must be considered on their ability to be expanded upon for true European/Japanese type high speed monorail. It doesn't have to be the same but, you know, if we're already running the overhead lines and make these trains go 125 miles an hour you should be able to expand that in the future.
Response	Thank you for your comments on the possibility of using technology that requires a dedicated right or way. Early in the alternatives identification process, higher speed (very high speed) options were reviewed, but were not selected as they would have a greater impact on the environment and would require substantially greater financial resources. In selecting Alternative 90B as the Preferred Alternative for the High Speed Rail Empire Corridor Program, the FRA and NYSDOT focused on railroad technology discussed in the Tier 1 EIS.
Commenter	Jordan, Jacob, Executive Director, Queen City Rail Trails, Queen City Rail Trails
Comment O-99-3	The existing plan that we talked about talks about expanding the Buffalo-Depew station which has -- those of you around here know is a brick shack out in the suburbs. I mean there is nothing wrong with that, but it definitely could be an investment that we're seeing in the City of Buffalo and Western New York and especially in downtown, medical campus,

Main Street, and waterfront corridor that an expansion to main Street to be a larger capacity station or an all together new downtown station in the City of Buffalo is of importance to any project in the Western New York area.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the need for improvements to station(s) in Buffalo. The High Speed Rail Empire Corridor Tier 1 EIS evaluates a range of corridor-level service improvements for the purpose of making decisions on corridor-level service. NYSDOT has implemented upgrades at the existing rail station at Buffalo-Depew to improve/rehabilitate the parking lot and enhance passenger access to comply with Americans with Disabilities Act requirements. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter **Esposito, Paul, Railex, Railex**

Comment O-100-1 I am concerned that the proposed high speed rail corridor would negatively affect business operations.

Response Thank you for your comment on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter **Esposito, Paul, Railex, Railex**

Comment O-100-2 I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage that will expand capacity for both passenger and freight rail on the Empire Corridor.

Commenter **Fesen, Michael, President, Railroads of New York (RONY), Railroads of New York (RONY)**

Comment O-101-1 I wish to express our support for the base alternative

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. Alternative 90B will provide approximately 370 miles of additional trackage to

	better segregate passenger and freight traffic and will reduce travel times between New York City and Niagara Falls by 1½ hours in 2035, compared to the Base Alternative. Alternative 90B would also involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Feller, DeWain, Vice President, Reconnect Rochester, Reconnect Rochester
Comment O-102-1	Reconnect Rochester strongly supports the Empire Corridor High Speed Rail Project design presented in the DEIS, in particular “Alternative 110.”
Response	Your comment in support of the 110 Alternative has been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Because of the required property acquisition, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance.
Commenter	Feller, DeWain, Vice President, Reconnect Rochester, Reconnect Rochester
Comment O-102-2	We ask for the following changes and clarifications: -Retain Central Avenue in the design of the Rochester Intermodal Transportation Center’s Phase II.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the Rochester Station Project. The rail station at Rochester has been replaced by a new intermodal passenger station, information on the public outreach for this project can be found at: https://www.dot.ny.gov/rochesterintermodalcenter/outreach
Commenter	Feller, DeWain, Vice President, Reconnect Rochester, Reconnect Rochester
Comment O-102-3	We ask for the following changes and clarifications: -Improve transit, pedestrian and bicycle connections to the Rochester Intermodal Transportation Center.
Response	The improvements for the Empire Corridor have been designed to facilitate passenger connections with stations along the route, including the Rochester Station. The intermodal Rochester Station will promote economic development by connecting people to the downtown Rochester and destinations along the Empire Corridor. The station reconstruction project replaced the existing station with a fully ADA compliant Intermodal Transportation Center that meets the needs of the traveling public entering and exiting the Empire Corridor at Rochester.
Commenter	Feller, DeWain, Vice President, Reconnect Rochester, Reconnect Rochester
Comment O-102-4	We ask for the following changes and clarifications: -Re-acquire the former Mainline ROW through Fairport to accommodate the addition of a dedicated passenger track.
Response	Thank you for your analysis of the track arrangements in the Tier 1 DEIS for the High Speed Rail Empire Corridor program. . The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will reduce travel times between New York City and Niagara Falls by 1 ½ hours in 2035, compared to the Base Alternative. This additional trackage includes additional third track to be installed between Schenectady and Buffalo-Depew, including through Fairport. The arrangements of tracks at Fairport were altered several years ago to support the elimination of a grade crossing on State Highway 250 (Main Street) in the community. As

	projects are considered in the Tier 2 assessments for the program, the impact of railroad operations on grade crossing can be reviewed with a focus on promoting safety.
Commenter	Feller, DeWain, Vice President, Reconnect Rochester, Reconnect Rochester
Comment O-102-5	We ask for the following changes and clarifications: -Accommodate new stations in Lyons (or Newark) and Batavia.
Response	Thank you for your comments on adding more stations to the Empire Corridor routes as part of the public review of the Tier 1 DEIS. The Tier 1 EIS outlines the improvements needed at existing stations for each of the alternatives; the inclusion of additional stations along the Empire Corridor would have to be part of future studies for expanding service.
Commenter	Feller, DeWain, Vice President, Reconnect Rochester, Reconnect Rochester
Comment O-102-6	We ask for the following changes and clarifications: -Accommodate the introduction of regional service along the Niagara Falls to Albany corridor.
Response	Thank you for your comments on the Tier 1 DEIS and the suggestion for the introduction of regional type service along the Empire Corridor. In the Preferred Alternative, regional trains will continue to operate and service all stations between Albany and Buffalo/Niagara Falls, but at a greater frequency (doubling the service currently provided). Suggestions and comments for improvements to the service have been considered in the development of the Service Development Plan component of the Tier 1 FEIS.
Commenter	Feller, DeWain, Vice President, Reconnect Rochester, Reconnect Rochester
Comment O-102-7	I'm from Reconnect Rochester, which is a local organization that supports and approves transportation, including transit. And we do very strongly support improvement to the Empire Corridor, as well as the new Rochester Intermodal Station. However, personally, as an individual I'd like to say: In an ideal world, I would like to see the 125 Option. So I would hate to see that we insist upon a 125-mile-an-hour Option and wind up really getting more decades of nothing significant happening in the corridor.
Response	Your comment in support of the 125 Alternative has been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. In selecting Alternative 90B as the Preferred Alternative for the High Speed Rail Empire Corridor Program, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts. Alternative 90B would also shorten the trip from New York City to Niagara Falls by 1½ hours. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative). A substantial drawback of Alternative 125 is that it would take the longest time to construct and would be the costliest alternative.
Commenter	Feller, DeWain, Vice President, Reconnect Rochester, Reconnect Rochester
Comment O-102-8	...we very strongly support the efforts for a new Amtrak and Trailway/Greyhound station here in Rochester. It would be a vast improvement for all passengers.
Response	Thank you for your comments on the Rochester Station project. The rail station at Rochester has been replaced by a new intermodal passenger station. Further information on the new Intermodal Station at Rochester can be found at: https://www.dot.ny.gov/rochesterintermodalcenter
Commenter	Feller, DeWain, Vice President, Reconnect Rochester, Reconnect Rochester

Comment O-102-9 We do have major concerns about the current concept of the second phase which would sever Central Avenue between Clinton and Joseph. And that would create a huge barrier, a superblock to the 1960s and '70s terminology, between Cumberland and Ward Street where you have no option for getting between the two streets, between Clinton and Joseph. I think we could very easily modify that phase to keep Central Avenue in place.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the Rochester Station project. The rail station at Rochester has been replaced by a new intermodal passenger station. The new station maintains access and continuity along Central Avenue.

Further information on the new Intermodal Station at Rochester can be found at:

<https://www.dot.ny.gov/rochesterintermodalcenter>

Commenter Pearson, Ben, Republic Services, Republic Services

Comment O-103-1 I am concerned that the proposed high speed rail corridor would negatively affect business operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail.

Commenter Pearson, Ben, Republic Services, Republic Services

Comment O-103-2 I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter Johnson, Kenneth, Republic Steel, Republic Steel

Comment O-104-1 I am concerned that the proposed high speed rail corridor would negatively affect business operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage that will expand capacity for both passenger and freight rail on the Empire Corridor.

Commenter Johnson, Kenneth, Republic Steel, Republic Steel

Comment O-104-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As outlined above, this alternative would improve both passenger and freight rail capacity and operations.
Commenter	Rotondo, Rob, Rotondo Warehouse, Rotondo Warehouse
Comment O-105-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Dietz, Steven, RPMG, RPMG
Comment O-106-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage that will expand capacity for both passenger and freight rail on the Empire Corridor.
Commenter	Dietz, Steven, RPMG, RPMG
Comment O-106-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Anzevino, Jeffrey, Director of Land Use Advocacy, Scenic Hudson, Inc., Scenic Hudson, Inc.
Comment O-107-1	we are primarily concerned that the implementation of an improved high speed rail program between New York and Albany does not further limit the public's access to the river

Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. The improvements proposed are largely restricted to the railroad right-of-way and should not impede public access to the river beyond what currently exists. Reviews of public access in the Hudson Valley can be evaluated, as appropriate, in the Tier 2 assessments for individual projects that are part of the program.
Commenter	Anzevino, Jeffrey, Director of Land Use Advocacy, Scenic Hudson, Inc., Scenic Hudson, Inc.
Comment O-107-2	The "Purpose and Need" section of the DEIS should be amended to include a statement that affirms that public access to the Hudson River's shore will not be diminished, and where possible, the project will seek out new opportunities and partnerships to provide additional access.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. The purpose of the High Speed Rail Empire Corridor Program is to introduce higher passenger train speeds on the Empire Corridor and to improve reliability, travel times, service frequencies, and passenger amenities. Access to the Hudson River for recreation could be part of the analysis in Tier 2, as appropriate, for individual projects in this segment of the route.
Commenter	Anzevino, Jeffrey, Director of Land Use Advocacy, Scenic Hudson, Inc., Scenic Hudson, Inc.
Comment O-107-3	Since the High Speed Rail program will require federal and state permits and use federal funding, a consistency determination must be made with respect to New York State's Coastal Management Plan.
Response	Thank you for your comments. Acquisition of federal and state permits and approvals would be performed as part of the Tier 2 assessments for individual projects that are part of the program.
Commenter	Anzevino, Jeffrey, Director of Land Use Advocacy, Scenic Hudson, Inc., Scenic Hudson, Inc.
Comment O-107-4	We urge the New York State Department of Transportation (DOT) to include in the program financial and planning incentives to support municipal efforts to plan for and implement Transit-oriented development (TOD) in areas around existing or future train stations.
Response	Thank you for your comments on improving transit oriented development, and the opportunities for Transit Oriented Development could be part of future station projects along the Empire Corridor. The improvements at new or existing stations constructed by NYSDOT in Niagara Falls, Buffalo, Rochester, Syracuse, and Albany were implemented as separate projects, with the goal of complementing the neighborhood and fostering adjacent development.
Commenter	Anzevino, Jeffrey, Director of Land Use Advocacy, Scenic Hudson, Inc., Scenic Hudson, Inc.
Comment O-107-5	We urge DOT to plan for future sea level rise and flooding patterns and to use the planning for the High Speed Rail Project as an opportunity to make the entire corridor more resilient so that public investment in this infrastructure is protected over the long run.
Response	Thank you for your comments on flooding and resiliency of the system as part of the public review. In the aftermath of Hurricanes Irene and Sandy, the railroads along the Empire Corridor; Metro North Railroad, Amtrak, and CSX Transportation have all taken proactive measures to protect their operations along the Hudson and Mohawk Rivers and continue to

	make improvements to protect trackage and signal systems from high water and flooding. In the Tier 2 process, potential mitigation strategies and future analysis that could be performed is discussed in Chapter 4 – Sections 4.20.5 and 4.11.6.
Commenter	Edic, Steven, Plant Manager, Scepter New York, Scepter New York
Comment O-108-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will reduce travel times between New York City and Niagara Falls by 1 ½ hours in 2035, compared to the Base Alternative.
Commenter	Edic, Steven, Plant Manager, Scepter New York, Scepter New York
Comment O-108-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Rhode, Steve, Vice President - Rail, Schneider National Carriers, Inc., Schneider National Carriers, Inc.
Comment O-109-1	We urge that the Department of Transportation give considerable weight to the effect that the various passenger rail options under review may have on freight movement.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Rhode, Steve, Vice President - Rail, Schneider National Carriers, Inc., Schneider National Carriers, Inc.
Comment O-109-2	We therefore urge that the Department of Transportation to reject any passenger rail service proposal which does not adequately protect existing freight rail service.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As outlined above, this alternative would improve both passenger and freight rail capacity and operations.

Commenter	Pagliuca, David, Schnitzer, Schnitzer
Comment O-110-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Pagliuca, David, Schnitzer, Schnitzer
Comment O-110-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage that will expand capacity for both passenger and freight rail on the Empire Corridor.
Commenter	Shea, Harry, Shea Lumber, Shea Lumber
Comment O-111-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Shea, Harry, Shea Lumber, Shea Lumber
Comment O-111-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage that will expand capacity for both passenger and freight rail on the Empire Corridor.
Commenter	Hodgkiss, Charles, Rail Transport Consultant, Shelly Materials, Shelly Materials

Comment O-112-1	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, potentially constraining freight rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Grandstaff, Jeff, ShipCarsNow, ShipCarsNow
Comment O-113-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage that will expand capacity for both passenger and freight rail on the Empire Corridor.
Commenter	Grandstaff, Jeff, ShipCarsNow, ShipCarsNow
Comment O-113-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Dilling, Travis, ShipCarsNow, ShipCarsNow
Comment O-113-3	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage that will expand capacity for both passenger and freight rail on the Empire Corridor.
Commenter	Dilling, Travis, ShipCarsNow, ShipCarsNow

Comment O-113-4	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As outlined above, this alternative would improve both passenger and freight rail capacity and operations.
Commenter	Hamilton, Christa, ShipCarsNow, ShipCarsNow
Comment O-113-5	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Hamilton, Christa, ShipCarsNow, ShipCarsNow
Comment O-113-6	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage that will expand capacity for both passenger and freight rail on the Empire Corridor.
Commenter	Barbari, Mark, Smart Warehousing, Smart Warehousing
Comment O-114-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Barbari, Mark, Smart Warehousing, Smart Warehousing
Comment O-114-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A,

90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As outlined above, this alternative would improve both passenger and freight rail capacity and operations.

Commenter **Manno, James, Sonwil Distribution Center, Sonwil Distribution Center**

Comment O-115-1 I am concerned that the proposed high speed rail corridor would negatively affect business operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter **Manno, James, Sonwil Distribution Center, Sonwil Distribution Center**

Comment O-115-2 I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage that will expand capacity for both passenger and freight rail on the Empire Corridor.

Commenter **Shields, Jamison, SP Fiber Technologies, SP Fiber Technologies**

Comment O-116-1 I am concerned that the proposed high speed rail corridor would negatively affect business operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter **Shields, Jamison, SP Fiber Technologies, SP Fiber Technologies**

Comment O-116-2 I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.

Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As outlined above, this alternative would improve both passenger and freight rail capacity and operations.
Commenter	Berti, Joseph, Speed Global Services, Speed Global Services
Comment O-117-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Berti, Joseph, Speed Global Services, Speed Global Services
Comment O-117-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As outlined above, this alternative would improve both passenger and freight rail capacity and operations.
Commenter	Byrd, Bruce, SSAB, SSAB
Comment O-118-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Byrd, Bruce, SSAB, SSAB
Comment O-118-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As outlined above, the additional trackage provided by this alternative would improve both passenger and freight rail capacity and operations.
Commenter	Cummins, John, Suburban Propane, LP, Suburban Propane, LP

Comment O-119-1	We urge the state of New York to consider the impact on freight rail operations when selecting an alternative.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Baldock, Samantha, SUNY Fellow on Women & Public Policy, Center State Corporation for Economic Opportunity (CEG), Center State Corporation for Economic Opportunity (CEG)
Comment O-120-1	Each of the alternatives, under consideration, to increase train speed are accompanied by operating deficits and expensive price tags, yet they do project an increase in overall passengers. Thus, we must support an option that takes our system into the 21st century and beyond. Balancing the cost of increased speed with a reduction in travel time should be paramount in the decision making process.
Response	Thank you for your comments on the alternatives in the Tier 1 DEIS, and your support of the High Speed Rail Empire Corridor Program. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight traffic and will reduce travel times between New York City and Niagara Falls by 1½ hours in 2035, compared to the Base Alternative. The subsidy for the Preferred Alternative (Alternative 90B) would be \$13 per rider, which would be lower than both Alternative 125's subsidy per rider of \$14 and the Base Alternative's subsidy per rider of \$17 per rider. Alternative 90B's costs would also be less than that for Alternative 110. Its capital cost would be \$720 million (or 12%) less than that for Alternative 110, and annual operating and maintenance costs would be \$2 million lower than for Alternative 110. A discussion of the comparison of the alternatives is discussed Chapter 6 of the Tier 1 EIS.
Commenter	Baldock, Samantha, SUNY Fellow on Women & Public Policy, Center State Corporation for Economic Opportunity (CEG), Center State Corporation for Economic Opportunity (CEG)
Comment O-120-2	CEG supports the goal of the EIS to study and select a HSR service level that advances operations and infrastructure, so that train frequency and travel times improve.
Response	Thank you for your support of the High Speed Rail Empire Corridor Program. The Preferred Alternative, Alternative 90B, was selected over Alternatives 110 and 125, based on its substantially lower costs, impacts, and its performance. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Because of the required property acquisition, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance. Because Alternative 90B is situated largely within the existing right-of-way, it can be constructed in substantially less time than Alternative 125 and will begin to confer benefits

within 2 to 5 years after start of construction. Unlike the 125 express service, which would bypass existing stations at Schenectady, Amsterdam, Rome, Utica, and Buffalo-Depew, it will improve service to these existing stations.

Commenter Sarin, Peter, Synagro, Synagro

Comment O-121-1 I am concerned that the proposed high speed rail corridor would negatively affect our cost of operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. In selecting Alternative 90B as the Preferred Alternative for the High Speed Rail Empire Corridor Program, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts. Alternative 90B would also shorten the trip from New York City to Niagara Falls by 1½ hours.

Commenter Sarin, Peter, Synagro, Synagro

Comment O-121-2 I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter Bobitt, James, Tate & Lyle, Tate & Lyle

Comment O-122-1 I am concerned that the proposed high speed rail corridor would negatively affect business operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter Bobitt, James, Tate & Lyle, Tate & Lyle

Comment O-122-2 I urge the state to maintain current freight service and the capacity for growth by selecting the base alternative.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage that will expand capacity for both passenger and freight rail on the Empire Corridor.

Commenter	Tighe, John, Tighe Logistics Group, Tighe Logistics Group
Comment O-123-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight traffic and will reduce travel times between New York City and Niagara Falls by 1½ hours in 2035, compared to the Base Alternative. Alternative 90B would also involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Tighe, John, Tighe Logistics Group, Tighe Logistics Group
Comment O-123-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As outlined above, this alternative would improve both passenger and freight rail capacity and operations.
Commenter	Bard, James, United States Steel Corporation, United States Steel Corporation
Comment O-124-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Bard, James, United States Steel Corporation, United States Steel Corporation
Comment O-124-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage that will expand capacity for both passenger and freight rail on the Empire Corridor.
Commenter	Seligman, Joel, President, University of Rochester, University of Rochester

Comment O-125-1	Thank you for allowing me the opportunity to submit testimony on behalf of the University of Rochester in support of passenger rail improvements to New York's Empire Corridor. If New York wants a 21st century innovation-based economy, we need a 21st century transportation system to accommodate it and compete with the rest of the world. I strongly support the proposed alternatives that improvement in service will increase ridership and support and help accommodate increased demand associated with planned and future growth of the University.
Response	Thank you for your support of the High Speed Rail Empire Corridor Program. Important goals of the project are to improve reliability, reduce trip times and increase the frequency of trains of the program. Your comment has been reviewed by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight traffic and will reduce travel times between New York City and Niagara Falls by 1½ hours in 2035, compared to the Base Alternative. Alternative 90B would also involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Thomas, Ph.D., Alexander R., Director, Utica College Center for Small City and Rural Studies, Utica College Center for Small City and Rural Studies
Comment O-126-1	We see potential for High Speed Rail to move these time distances further upstate, drawing Albany within daily commuting distance (at 125 Miles per hour) and Utica within the "arts" zone.
Response	Thank you for your comments on the Tier 1 DEIS in support of the program. Alternative 125 was designed to help cut the distance between Albany and Syracuse by 14 miles, but one of the major drawbacks of this route is that it passes to the south of the stations on the current Empire Corridor in the Mohawk Valley between Syracuse and Albany. Therefore, express service would not serve Rome, Utica, Amsterdam, and Schenectady. The Preferred Alternative, Alternative 90B, was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance. As discussed in Chapter 3 of the Tier 1 FEIS, the Preferred Alternative would increase service to Utica.
Commenter	Thomas, Ph.D., Alexander R., Director, Utica College Center for Small City and Rural Studies, Utica College Center for Small City and Rural Studies
Comment O-126-2	We also believe that New York City would benefit from increased access to upstate residential, labor, and retail markets as the city has added nearly one million residents since 1990. In fact, such cities as Tokyo have turned to High Speed Rail as a mechanism for increasing the city's "local" market, and we believe that New York will need to do the same in order to remain competitive against other global cities.
Response	Thank you for your comments on the benefits that can be achieved by the High Speed Rail Empire Corridor Program. An important goal of the program is to support economic growth along the Empire Corridor, as you discuss in your comment.
Commenter	Thomas, Ph.D., Alexander R., Director, Utica College Center for Small City and Rural Studies, Utica College Center for Small City and Rural Studies
Comment O-126-3	We would certainly be in favor of 110 miles per hour train, although we also believe that a connection of 125 miles per hour would maximize this potential in eastern New York State.
Response	Your comment discussing the 110 and 125 Alternatives have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. The Preferred Alternative, Alternative 90B, was selected over Alternatives 110 and 125, based on its substantially lower costs, impacts, and its performance. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the

alternatives considered. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Because of the required property acquisition, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance. Because Alternative 90B is situated largely within the existing right-of-way, it can be constructed in substantially less time than Alternative 125 and will begin to confer benefits within 2 to 5 years after start of construction. Unlike the 125 express service, which would bypass existing stations at Schenectady, Amsterdam, Rome, Utica, and Buffalo-Depew, the Preferred Alternative will maintain/increase service to all existing stations.

Commenter	Thomas, Ph.D., Alexander R., Director, Utica College Center for Small City and Rural Studies, Utica College Center for Small City and Rural Studies
Comment O-126-4	Alternatively, a "hybrid" model of 125 mile-per-hour connection between New York and Utica and 110 mile-per-hour to the west would also be quite effective.
Response	Thank you for your comments on improving and offering intercity rail passenger service for the City of Utica, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125, a high-speed railroad on a new alignment, was designed to help cut the distance between Albany and Syracuse by 14 milese. One of the major drawbacks of this route is that it passes to the south of the stations on the current Empire Corridor in the Mohawk Valley between Syracuse and Albany. Therefore, it would not serve Rome, Utica, Amsterdam, and Schenectady. The Preferred Alternative, Alternative 90B, was selected over Alternatives 125 and 110, based on its substantially lower costs, impacts, and its performance. As discussed in Chapter 3 of the Tier 1 EIS, the Preferred Alternative will increase service to Utica.
Commenter	Applegate, Ken, Senior Vice-President/Transportation, Valero, Valero
Comment O-127-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Applegate, Ken, Senior Vice-President/Transportation, Valero, Valero
Comment O-127-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, and we are concerned about the potential for significant negative impacts to freight rail operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of

	additional trackage that will expand capacity for both passenger and freight rail on the Empire Corridor.
Commenter	Cadieux, Shirley, Warehouse Mgr., Valleypac Industries, Inc., Valleypac Industries, Inc.
Comment O-128-1	Valleypac was perturbed when we got the news that the Federal Railroad Administration and the New York State Department of Transportation were contemplating commingling Freight and Passenger traffic. Our wish list would be that CSXT continues to service us promptly, efficiently and safely as they have done for us for the past 30 years. We are truly concerned of how these changes could affect our future business.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Important goals for the program include improving travel times on the Empire Corridor, increasing the frequency of service and enhancing passenger amenities. Other goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increasing the attractiveness of the region for business. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight traffic and will reduce travel times between New York City and Niagara Falls by 1½ hours in 2035, compared to the Base Alternative. Alternative 90B would also involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Hammer, Virginia, President, Pine Hills Neighborhood Association, Pine Hills Neighborhood Association
Comment O-129-1	The likely replacement of this bridge provides an opportunity to reestablish a bicycle and pedestrian connection that is both safe and cost effective.
Response	Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge .
Commenter	Hammer, Virginia, President, Pine Hills Neighborhood Association, Pine Hills Neighborhood Association
Comment O-129-2	The Empire Corridor Draft Environmental Impact Statement does not acknowledge the walkway, support for the facility, or Federal Rail's own report outlining best practices for developing rail with trail facilities.
Response	Thank you for your comments on the Livingston Avenue Bridge. The Tier 1 FEIS (Section 7.7) notes the public support for the pedestrian walkway and bicycle path on the bridge in the comments received on the Tier 1 DEIS.
Commenter	Vaugh, Nick, Albany-Colonie Regional Chamber of Commerce, Albany-Colonie Regional Chamber of Commerce
Comment O-130-1	Good evening, everyone. I am Nick Vaugh with the Albany Colonie Regional Chamber. We represent over 2,200 members throughout the Capital Region that employ over 110,000 individuals. While we haven't taken an official position as far as the individual proposed plans, important points that we would like to have considered is first, no disruption to freight.

Response	Thank you for your comments in support for the High Speed Rail Empire Corridor Program. NYSDOT and the FRA are committed to the improvement of passenger rail service and maintaining freight operations along the Empire Corridor. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Vaugh, Nick, Albany-Colonie Regional Chamber of Commerce, Albany-Colonie Regional Chamber of Commerce
Comment O-130-2	The other is the affordability for passengers. The frequency is critical, especially when we head west, and the reliability, knowing the train will show up and knowing when and where, it's very critical.
Response	Thank you for your comments in support for the High Speed Rail Empire Corridor Program. The Preferred Alternative, Alternative 90B, would double the service frequency along Empire Corridor West for the service leg that includes Utica and Rome. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 of all of the alternatives considered. Although Alternative 110 has the lowest subsidy, the subsidy for the Preferred Alternative (Alternative 90B) would be \$13 per rider, which would be lower than both Alternative 125's subsidy per rider of \$14 and the Base Alternative's subsidy per rider of \$17 per rider. Alternative 90B's costs would also be less than that for Alternative 110. Its capital cost would be 12% less than that for Alternative 110, and annual operating and maintenance costs would be \$2 million lower than for Alternative 110.
Commenter	Calsolaro, Dominick, Reclaim Our Waterfront (ROW), Reclaim Our Waterfront (ROW)
Comment O-131-1	I'm here representing a group they call ROW, R-O-W, Reclaim Our Waterfront. We are a group of people, business owners, sports clubs, bicycling, running, paddling, walking and local elected officials. We agree that improvements for high speed rail in the Empire Corridor is a much needed necessity as we move deeper into the 21st Century. However, ROW has not yet taken a stand on which option to consider the best option for improving high speed rail service from New York City to Niagara Falls.
Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will reduce travel times between New York City and Niagara Falls by 1 ½ hours in 2035, compared to the Base Alternative. Alternative 90B, the Preferred Alternative, would increase ridership by 1 million over the Base Alternative.
Commenter	Calsolaro, Dominick, Reclaim Our Waterfront (ROW), Reclaim Our Waterfront (ROW)
Comment O-131-2	What we are taking a strong stand on, though, is the inclusion in whatever option is finally decided upon, that the reconstruction of the Livingston Avenue Bridge include a pedestrian and bike access way across the Hudson River. The Livingston Avenue Bridge was originally constructed with a walkway that made it possible for pedestrians and bicyclists to safely cross the Hudson River between Albany and Rensselaer. The walkway was open for decades, going back to the late 1800s and early 1900s, until it was closed about 20 or so years ago because of needed repairs. To include the walkway as part of the reconstruction of the Livingston Avenue Bridge is a very inexpensive item when looking at the projected cost of the numerous options for improving high speed rail in the Empire Corridor. The walkway is a necessity, not an amenity.

Response	Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge .
Commenter	Calsolaro, Dominick, Reclaim Our Waterfront (ROW), Reclaim Our Waterfront (ROW)
Comment O-131-3	Local governments on both sides of the Hudson have made better access to the river a priority. The City of Albany has not one, but two planning groups working on river access issues as a way to encourage economic development in these downtown neighborhoods. Rensselaer is in the process of extending their riverside pedestrian and bike trails north, bringing the trail closer to the Troy waterfront. The inclusion of a walkway connecting Albany and Rensselaer will go a long way to regionalizing economic development in the Capital Region. The walkway would connect the ever-increasing rail-trails on the Albany side of the Hudson, to the expanding trail on the Rensselaer/Troy side of the Hudson.
Response	Thank you for your comments on the inclusion of a walk and bikeway on the Livingston Avenue Bridge. The Tier 1 FEIS (Section 7.7) notes the public support for the pedestrian walkway and bicycle path on the bridge in the comments received on the Tier 1 DEIS.
Commenter	Newman, William, Reclaim Our Waterfront (ROW), Reclaim Our Waterfront (ROW)
Comment O-131-4	I'd like to see a restoration of the pedestrian walkway on the rail crossing over the Hudson River at the Livingston Avenue railroad bridge. This crossing is very important for the economic revitalization that is going on both in the City of Albany and the City of Rensselaer. My group does not have a preference in terms of which alternative, it's more of a reestablishing that pedestrian connection with the replacement bridge that will be going forward.
Response	Thank you for your comments in support of improving the Livingston Avenue Bridge, which is part of the program evaluated in the Tier 1 FEIS. The Tier 1 FEIS notes the public support for the pedestrian walkway and bicycle path on the bridge.
Commenter	Vamos, Ivan, New York Bicycling Coalition, New York Bicycling Coalition
Comment O-132-1	My name is Ivan Vamos AICP, retired Deputy Commissioner of NYS Parks, Recreation and Historic Preservation (OPRHP), Vice-Chair of NY State's Trails Advisory Committee, member of CDTC (Capital Dist. MPO) Bicycling Pedestrian Advisory Committee and Board Member Emeritus NY State Bicycling Coalition. My involvement with the Empire State Corridor, freight lines along the same and parallel routes includes about 50 years of experience, occasionally necessitating negotiations with the railroads regarding bridges and other right-of-way issues and I continue to be interested as a regular train passenger. However there are issues that the DEIS fails to address, probably making the document deficient or incomplete. I will limit my comments to a few selected, very relevant bridge and access issues that are not addressed in the DEIS at all. NY State is much benefited by long and scenic rail lines, especially those located along the Hudson and Mohawk Rivers and Lake Champlain.
Response	Thank you for your comment on the High Speed Rail Empire Corridor Program. Comments from the public, relating to the accessibility of recreational areas along the Empire Corridor,

have been considered by FRA and NYSDOT in the selection process for a Preferred Alternative for the High Speed Rail Empire Corridor Program.

Commenter **Vamos, Ivan, New York Bicycling Coalition, New York Bicycling Coalition**

Comment
O-132-2

A combination of aging bridges, both impromptu and signalized at grade crossings and guarded, closed access points (that do experience problems with trespass) at one time offered rail line crossings, frequently developed and managed by the railroad company owning the line. These rail line bridge crossings were not addressed through the years and are not mentioned in the DEIS. Elevated walkways crossing the lower Hudson route have long been closed, and offer third-world examples of this issue, with stairways left dangling in the air. What were at one time formerly managed crossings have been deemed “closed” because of safety concerns, while they remain very much in use with trespassers dumping trash, setting fires and causing other problems.

A very few selected “closed” bridges and crossings that were formerly a railroad responsibility have been reluctantly addressed by public and private entities that were stuck solving the safety issues involved to continue the use of their riverfront properties. Three examples along the tidal Hudson come to mind since these locations had to be solved by OPRHP, with some help from other agencies, and legislative initiative. The Parks agency replaced “closed”, the derelict bridge to Little Stony Point, the at grade crossing providing access to the 9 mile long Schodack-Castleton peninsula, and Stony Point Bridge, located in Putnam, Rensselaer / Columbia and Rockland Counties respectively. If these bridge issues had not been addressed, important state recourses would have been closed to the public, including parks, historic and marine sites, a museum, proposed natural beaches and great hiking, fishing and riding opportunities. Worse than the loss of closed facilities and parks, the public didn’t stop accessing these sites just because the railroad posted a “closed” sign on the crossing, so the closed crossing presented a policing and safety problem without any benefit. The railroad simply ignored their responsibilities and perhaps hoped someone else would offer a solution.

It is understood that this is a large, far scattered and complex problem requiring considerable work to identify what’s to be done, along the Empire Corridor. However at least the issue should have been conceptually and procedurally addressed in the DEIS. An approach to analyzing and solving these crossing problems, identifying where increased speeds and rail service improvements will exacerbate the safety issues, and perhaps proposing standards that are to be followed, should have been added to the DEIS.

Response

Thank you for expressing your comments and concerns. The High Speed Rail Empire Corridor Tier 1 EIS evaluates a range of corridor-level service improvements for the purpose of making decisions on corridor-level service, including service reliability, service frequency, and train speeds. Alternatives. Safety Considerations are discussed in Section 2.6 of the Tier 1 FEIS. Access across the rail right-of-way could be addressed in Tier 2 assessments for individual projects and any planning would need to consider existing access and easement agreements, with the railroad companies owning the right-of-way.

Commenter **Vamos, Ivan, New York Bicycling Coalition, New York Bicycling Coalition**

Comment
O-132-3

There are other bridges where a strategic crossing has been a part of the railroad bridge and the abandonment of walkway facilities by the rail owners was based on no other consideration than saving maintenance funds. The abandonment of immediate concern at this time is the pedestrian walkway along the 112 year old Livingston Ave Bridge (LAB) connecting the Cities of Albany and Rensselaer. This bridge must be rebuilt or rehabilitated very soon for the Empire State Corridor system to function. I was delighted to be included in a meeting with DOT, CDTC (the MPO), Modjeski and Masters (the bridge consultant hired by NYS DOT), Cities of Albany and Rensselaer and Albany County representatives on Sept. 30, 2010 to discuss the LAB. Regarding the walkway, we noted that there was never a formal “abandonment” such as a State or ICC proceeding (if required circa 1970), it was simply closed without notice! We discussed one inadequate option; the mile distant, and

sub-standard, out of ADA compliance, crossing along the Dunn Memorial Bridge, serving another community. Inconveniently high, the route is generally thought to be unattractive and even unsafe. Two or more viable, attractive pedestrian crossings served these Cities from the Civil War into the 1970s. It was clear that no other option existed than to rebuild or rehab the walkway on the LAB at that location.

We discussed if multi-purpose trails existed along active rail rights of way; I alerted the attendees at the 3/30/'10 meeting to several reports cataloging these activities and offering model solutions. I agreed to provide a report on the subject, and mailed a five page synopsis of my findings to all at the meeting on Oct. 25, 2010.

A few calls followed regarding details about access from existing trails on both shorelines up to the LAB (about 24'), but no response, decision, acknowledgement or project status report was received in three or more years.

The Cities, Counties, Federal and State legislators passed resolutions and took positions strongly supporting the reconstruction of the LAB.

If however the existing (but closed without review) walkway along the LAB is not evaluated as a viable option to be undertaken with the LAB, then I assume the DEIS, the project, and perhaps the entire Empire Corridor,

Response Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge.

Commenter Vamos, Ivan, New York Bicycling Coalition, New York Bicycling Coalition

Comment O-132-4 I am adding a relatively simple request to to my testimony (perhaps already part of the project but not shown on the renderings); the new and renovated rail stations that are included in the Base Alternative, as well as some of the stations that were not included, should all have convenient bike racks, some perhaps under cover, installed as part of the project.

Response Thank you for your continued interest in the High Speed Rail Empire Corridor Program. Comments from the public, relating to the accessibility for bicycles and pedestrians, have been considered by FRA and NYSDOT in the selection process for a Preferred Alternative. A number of station improvement projects have been completed as separate independent projects along the Empire Corridor, including reconstruction at the Buffalo-Exchange Street Station. The projects included in the Preferred Alternative will undergo a second evaluation (Tier 2), and bicycle and pedestrian accommodations can be further evaluated at that time for any station projects included, as appropriate.

Commenter Vamos, Ivan, New York Bicycling Coalition, New York Bicycling Coalition

Comment O-132-5 I am from New York State Bicycle Coalition and I am also a member of several advisory groups, Trails, as well as CDTCs Bike Path Task Force. I'm pleased to hear that the EIS includes some at-grade crossing improvements, but more are needed.

It really should be considered, as part of an overall program, how to deal with the major sites that are cut off by the railroads, and that could be also along the freight lines elsewhere, where there are equal problems. That is a long-term program. I realize it can't be done at the same time as this EIS, but it's something that EIS should mention.

Response Thank you for your comments on the grade-crossings along the Empire Corridor. The High Speed Rail Empire Corridor Tier 1 EIS evaluates a range of corridor-level service improvements for the purpose of making decisions on corridor-level service, including

service reliability, service frequency, and train speeds. Chapters 2 and 3 address safety for the existing corridor and the program alternatives. Comments from the public, discussing the safety of the operation of the high speed trains for both grade crossings and along the right of way, have been considered by FRA and NYSDOT in the selection process for a Preferred Alternative.

Commenter **Vamos, Ivan, New York Bicycling Coalition, New York Bicycling Coalition**

Comment O-132-6 There were proposals to connect up to that site and the railroads chose on their own, without any proceedings, without any hearings, without any ICC approval, if that's needed, to abandon that trail as part of their bridge and part of their service, without any public participation whatsoever. Now, I realize this was many years ago, but it remains out there. It should be replaced as the bridge is being replaced So we hope for this to be processed soon so we can know whether there is a proposal in place that has that as an option that could be selected, rather than getting stuck with an emergency project that leaves out this critical element and perhaps opens up the project to challenge because it has been not dealt with.

Response Thank you for your comments concerning the consideration of bicycles and pedestrians in the High Speed Rail evaluation process. Comments from the public, relating to the accessibility for bicycles and pedestrians, have been considered by FRA and NYSDOT in the selection process for a Preferred Alternative. Any projects resulting from the Preferred Alternative will undergo a second evaluation (Tier 2) and bicycle and pedestrian accommodations can be further evaluated at that time, as appropriate.

Commenter **Botzman, Harvey, New York Bicycling Coalition/Rochester Cycling Alliance, New York Bicycling Coalition/Rochester Cycling Alliance**

Comment O-132-7 I also am here representing the Rochester Cycling Alliance and the New York Bicycling Coalition, we all, those two organizations as well as myself. And I also belong to and I'm on the Board of Canal New York Business Alliance. Let me first make a short comment that the Canal Corporation is encouraging transport of all commodities and rail cars by barges. The problem is, there aren't enough barges.

Response Thank you for your comments. Public comments, discussing passenger rail operations as part of the High Speed Rail Empire Corridor Program, have been considered by FRA and NYSDOT in the selection process for the Preferred Alternative.

Commenter **Botzman, Harvey, New York Bicycling Coalition/Rochester Cycling Alliance, New York Bicycling Coalition/Rochester Cycling Alliance**

Comment O-132-8 But I'm here, basically, to support the 125-miles-per-hour trains. And one of the main reasons is the tourism potential of getting people from New York City to Upstate to Niagara Falls, as well as to the places in between: Albany, Syracuse, Rochester, Buffalo.

Response Views and comments from the public relating to support of Alternative 125 have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was designed to help cut the distance between Albany and Syracuse by 14 miles, but one of the major drawbacks of this route is that it passes to the south of the stations on the current Empire Corridor in the Mohawk Valley between Syracuse and Albany. Therefore, express service would not serve Rome, Utica, Amsterdam and Schenectady. The Preferred Alternative, Alternative 90B, was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance. As discussed in Chapter 3 of the Tier 1 FEIS, the Preferred Alternative would increase service to existing stations between Albany and Buffalo/Niagara Falls.

Commenter **Botzman, Harvey, New York Bicycling Coalition/Rochester Cycling Alliance, New York Bicycling Coalition/Rochester Cycling Alliance**

Comment O-132-9 And we must make sure that on each of the stations, and in fact this station, we have submitted comments as the Rochester Cycling Alliance and the New York Bicycling Coalition and myself, to make sure there are storage places and places which are secure for bicycles for people who want to get on a train and go down or go up, either way, and travel up by train.

Response Thank you for your continued interest in the High Speed Rail Empire Corridor Program. The Tier 1 EIS evaluates a range of corridor-level service improvements for the purpose of making decisions on corridor-level service, including service reliability, service frequency, and train speeds. Individual projects, or groups of projects, will undergo a second evaluation (Tier 2) to determine the best alternative for that project, or group of projects including looking at options for pedestrian/bicycle accommodations, as appropriate.

Commenter Parikh, Rohan, Albany Bicycle Coalition, Albany Bicycle Coalition

Comment O-133-1 My name Rohan Parikh. I am a resident of Red Hook, New York, in the Hudson Valley, as well as Albany, and I am involved with Albany Bicycle Coalition, a local group here, also the Livingston Avenue Bridge Coalition, What I will emphasize is that we are looking here at the EIS to mitigate environmental impacts, impacts on parks and recreation, facilities, impacts on historic resources. And one historic resource that spans New York State from Albany to Buffalo is the Erie Canalway Trail, and this trail follows very closely along with the rail corridor. And one opportunity to mitigate any environmental impact, would be to increase connectivity with this corridor, and that would be allowing bicycles on trains.

Response Thank you for your comments concerning the consideration of bicycles and pedestrians in the High Speed Rail evaluation process. Comments from the public, relating to the accessibility for bicycles and pedestrians have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Any projects resulting from the preferred alternative will undergo a second evaluation (Tier 2) and bicycle and pedestrian accommodations can be further evaluated at that time, as appropriate.

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I-102-1	Cianchetti, John
I-103-1	Cipriani, Corindo
I-104-1	Clark, James
I-105-1	Clark, Kenneth
I-106-1	Clute, Courtney, D.S. Ray Middle School
I-107-1	Colangelo, Dominick
I-108-1	Coleman, Stephen F., Licensed Psychologist
I-109-1	Collins, John
I-109-2	Collins, John
I-109-3	Collins, John
I-110-1	Collins, Timothy
I-110-2	Collins, Timothy
I-111-1	Collins, William L.
I-112-1	Cominsky, Sidney, Law Offices of Sidney O. Cominsky, LLC
I-113-1	Condo, Will
I-114-1	Conklin, Richard
I-115-1	Conner, Robert
I-116-1	Cook, Joyce
I-117-1	Cooley, Stacie
I-118-1	Kuersteiner, Donna and Cooper, John
I-119-1	Cope, Robert D.
I-120-1	Cording, Carl

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I-121-1	Cornwell, Kirk
I-122-1	Cox, Jane
I-122-2	Cox, Jane
I-123-1	Cox, Robert W.
I-124-1	Craig, Susan A.
I-124-2	Craig, Susan A.
I-125-1	Craine, Allison
I-126-1	Crandall, Brian
I-127-1	Crittenden, Gregory
I-128-1	Cruce, Joanne
I-129-1	Crysler, Robert E.
I-129-2	Crysler, Robert E.
I-129-3	Crysler, Robert E.
I-130-1	Curcio, Brad
I-131-1	Curtis, Robert
I-132-1	Czuprynski, Larry
I-133-1	Danieu, Eamon
I-134-1	D'Anthony, Dante
I-135-1	Dasey, Theresa M.
I-136-1	(No Last Name), David
I-137-1	Davis, Cindy
I-138-1	Davis, Jim
I-138-2	Davis, Jim
I-138-3	Davis, Jim
I-138-4	Davis, Jim
I-139-1	Davis, Steve
I-139-2	Davis, Steve
I-140-1	Dearing, Andrew
I-141-1	Decker, Leigh
I-141-2	Decker, Leigh
I-142-1	Degenfelder, Ron
I-143-1	Dekdebrun, Kylie
I-144-1	Delmonte, Andrew
I-145-1	DeLude, Danielle
I-146-1	Dembrosky, Stan
I-147-1	De Muth, Roger
I-148-1	DeNora, Nick
I-149-1	DesJardins, Zachary
I-149-2	DesJardins, Zachary
I-149-3	DesJardins, Zachary
I-149-4	DesJardins, Zachary
I-149-5	DesJardins, Zachary
I-149-6	DesJardins, Zachary
I-149-7	DesJardins, Zachary
I-149-8	DesJardins, Zachary
I-150-1	DeStefano, Linda A.
I-151-1	Dettman, Perry
I-151-2	Dettman, Perry
I-152-1	Dewitt, John
I-153-1	Dillingham, Justin
I-154-1	Dobucki, Randy
I-155-1	Dolhy, Paul
I-155-2	Dolhy, Paul

COMMENT #	COMMENTER
I-156-1	Dominguez, Javier
I-156-2	Dominguez, Javier
I-157-1	Donnelly, Jr., Peter
I-157-2	Donnelly, Jr., Peter
I-157-3	Donnelly, Jr., Peter
I-157-4	Donnelly, Jr., Peter
I-157-5	Donnelly, Jr., Peter
I-158-1	Donnelly, Steve
I-159-1	Dougherty, Catherine
I-159-2	Dougherty, Catherine
I-160-1	Drajem, Lynn
I-161-1	Drake, Paula
I-162-1	Du Bois, Patricia
I-163-1	Dudek, Jessica
I-164-1	Duszynski, Peter
I-164-2	Duszynski, Peter
I-165-1	Dworzanski, Ray
I-166-1	Dymond, Jayne
I-167-1	Eames, Frederick
I-168-1	Elton, Wallace
I-168-2	Elton, Wallace
I-168-3	Elton, Wallace
I-168-4	Elton, Wallace
I-169-1	Englert, Timothy
I-170-1	Erdmann, Tyler
I-171-1	Ericson, Del
I-172-1	Eson, Jud
I-173-1	Evans, J. Reid
I-174-1	Everett, Norma
I-175-1	Eyington, David
I-176-1	F., Audrey
I-177-1	Falbo, A.
I-178-1	Falbo, Antone
I-179-1	Fandl, Richard
I-180-1	(No Last Name), Fanying
I-181-1	Farina, Nicholas J.
I-182-1	Farrell, Shirley
I-182-2	Farrell, Shirley
I-182-3	Farrell, Shirley
I-183-1	Farrell, Don
I-184-1	Farrington, Alexandra
I-185-1	Fassler, Cary
I-186-1	Faulds, Colin and Fratesi, Victor
I-187-1	Faust, Catherine
I-188-1	Fava, Peter
I-188-2	Fava, Peter
I-188-3	Fava, Peter
I-189-1	Felder, Vincent R.
I-190-1	Felicetti, Tony
I-191-1	Fennie, Bruce, Bruce Fennie & Associates
I-191-2	Fennie, Bruce, Bruce Fennie & Associates
I-191-3	Fennie, Bruce, Bruce Fennie & Associates
I-191-4	Fennie, Bruce, Bruce Fennie & Associates

COMMENT #	COMMENTER
I-191-5	Fennie, Bruce, Bruce Fennie & Associates
I-192-1	Fernandez, Joseph, Licensed Real Estate Broker, CJF Realty
I-192-2	Fernandez, Joseph, Licensed Real Estate Broker, CJF Realty
I-192-3	Fernandez, Joseph, Licensed Real Estate Broker, CJF Realty
I-192-4	Fernandez, Joseph, Licensed Real Estate Broker, CJF Realty
I-193-1	Field, Susan
I-194-1	Filler, Samuel
I-195-1	Fisher, Jean
I-196-1	Fishlock, Frances
I-197-1	Fiutak, Paul
I-197-2	Fiutak, Paul
I-198-1	Flynn, L.R.
I-199-1	Foley, John
I-200-1	Folts, James D.
I-200-2	Folts, James D.
I-201-1	Forbes, Melissa
I-201-2	Forbes, Melissa
I-202-1	Fordock, Arleen
I-202-2	Fordock, Arleen
I-202-3	Fordock, Arleen
I-202-4	Fordock, Arleen
I-202-5	Fordock, Arleen
I-202-6	Fordock, Arleen
I-202-7	Fordock, Arleen
I-202-8	Fordock, Arleen
I-202-9	Fordock, Arleen
I-202-10	Fordock, Arleen
I-202-11	Fordock, Arleen
I-202-12	Fordock, Arleen
I-202-13	Fordock, Arleen
I-202-14	Fordock, Arleen
I-202-15	Fordock, Arleen
I-202-16	Fordock, Arleen
I-202-17	Fordock, Arleen
I-203-1	Freed, Wayne
I-203-2	Freed, Wayne
I-204-1	Freeman, Jeanne A.
I-204-2	Freeman, Jeanne A.
I-205-1	French, Joanne
I-206-1	Friedman, Jay
I-207-1	Friedman, Mark
I-208-1	Fronckowiak, Paul
I-209-1	Fullem, Robert
I-210-1	Fusarelli, Anthony Loreto
I-211-1	Fusarelli, Renee L.
I-212-1	Gaber, Matthew
I-212-2	Gaber, Matthew
I-212-3	Gaber, Matthew
I-213-1	Gaffney, Dennis
I-214-1	Gale, Peter
I-215-1	Gallagher, Kevin
I-215-2	Gallagher, Kevin
I-215-3	Gallagher, Kevin

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I-215-4	Gallagher, Kevin
I-215-5	Gallagher, Kevin
I-215-6	Gallagher, Kevin
I-215-7	Gallagher, Kevin
I-215-8	Gallagher, Kevin
I-215-9	Gallagher, Kevin
I-215-10	Gallagher, Kevin
I-215-11	Gallagher, Kevin
I-215-12	Gallagher, Kevin
I-215-13	Gallagher, Kevin
I-216-1	Ganjian, Ahmad
I-217-1	Gardner, Diane
I-218-1	Gataletto, Donna
I-218-2	Gataletto, Donna
I-219-1	Geleta, Marion
I-220-1	Georgi, Ethan
I-221-1	Geraci, Christine M.
I-222-1	Getz, Orrin
I-223-1	Giannino, Luca, D.S. Ray Middle School
I-224-1	DiFiore, Joe
I-224-2	DiFiore, Joe
I-225-1	Gibbons, Maggie
I-226-1	Gifford, Gladys
I-227-1	Gilchrist, Tim
I-227-2	Gilchrist, Tim
I-227-3	Gilchrist, Tim
I-227-4	Gilchrist, Tim
I-227-5	Gilchrist, Tim
I-227-6	Gilchrist, Tim
I-227-7	Gilchrist, Tim
I-228-1	Giles, William
I-228-2	Giles, William
I-229-1	Gilrein, John
I-230-1	Glende, Amy Marie
I-231-1	Glica, Shelley
I-232-1	Godlewski, PE, Stephan
I-233-1	Gollhardt, Andrea
I-234-1	Gomez, Larry
I-235-1	Goodwin, Catherine
I-236-1	Goodman, Ryan
I-237-1	Gordon, James
I-237-2	Gordon, James
I-237-3	Gordon, James
I-238-1	Gossett, Linda
I-239-1	Gough, Eliza J.
I-240-1	Granston, Kareem
I-241-1	Grauer, Jon
I-242-1	Gregory, Jr., Thomas P.
I-242-2	Gregory, Jr., Thomas P.
I-242-3	Gregory, Jr., Thomas P.
I-242-4	Gregory, Jr., Thomas P.
I-242-5	Gregory, Jr., Thomas P.
I-243-1	Greiner, Richard

COMMENT #	COMMENTER
I-244-1	Grekulak, Stephen
I-245-1	Griehl, Mary
I-246-1	Guarnere, Joanne
I-247-1	Gubbins, Barbara
I-248-1	Guguentz, Cindy
I-249-1	Guilmette, Lou
I-250-1	Gyurik, Gloria
I-251-1	Hacker, Abby
I-252-1	Hackett, Alice
I-253-1	Hall, Addie
I-253-2	Hall, Addie
I-254-1	Hall, Jane
I-255-1	Hall, Peter
I-256-1	Hanavan, Ian
I-257-1	Hanks, Kelsey
I-258-1	Hanna, Christopher
I-259-1	Hannon, Don, Hannon Transportation Consulting
I-260-1	Hardy, Joseph
I-261-1	Harf, Mark
I-262-1	Harner, Janet
I-262-2	Harner, Janet
I-263-1	Harnischfeger, Mark and Monica
I-264-1	Harrington, Bill
I-264-2	Harrington, Bill
I-264-3	Harrington, Bill
I-264-4	Harrington, Bill
I-264-5	Harrington, Bill
I-264-6	Harrington, Bill
I-265-1	Harris, Jason
I-266-1	Harris, Louise
I-267-1	Haun, Mark
I-268-1	Haynes, Jimmy
I-269-1	Healy, Edward J.
I-270-1	Hebert, Austin, D.S. Ray Middle School
I-271-1	Heint, Lucretia W.
I-272-1	Heintzman, Michael
I-273-1	Herrling, Daniel S.
I-273-2	Herrling, Daniel S.
I-274-1	Hill, Lauren
I-275-1	Hillengas, Paul
I-276-1	Hmiel, Abraham
I-277-1	Hooven, James
I-278-1	Hotra, Michael
I-279-1	Howard, Patricia G.
I-280-1	Huang, Jackie
I-281-1	Huber, Roger
I-281-2	Huber, Roger
I-282-1	Hufnagel, Glenn
I-283-1	Hunter, Suzanne
I-284-1	Hunters, CS
I-285-1	Hycner, Jim
I-286-1	Ilic, Mila
I-287-1	Inglis, Andrew A.

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I-288-1	Iocco, Joe
I-289-1	Isserlis, Alan
I-290-1	Jackson, Lynne
I-291-1	(No Last Name), Jacob
I-292-1	Jacobs, Joshua
I-293-1	Jacobs, Shari
I-294-1	James, Anthony
I-295-1	Jamieson, Richard A.
I-296-1	Jamison, Ann
I-296-2	Jamison, Ann
I-297-1	Jaroszewski, Tracy
I-298-1	Jenkins, Edward
I-298-2	Jenkins, Edward
I-298-3	Jenkins, Edward
I-299-1	Jennings, Susan Sturman, General Counsel and Senior Vice President, Conifer Realty, LLC
I-300-1	Jesaitis, Amy
I-301-1	(No Last Name), Johnny
I-302-1	Johns, Christopher
I-303-1	Johnson, Jeffrey
I-304-1	Johnson, Kristen
I-305-1	Johnson, William
I-305-2	Johnson, William
I-306-1	Johnston, Deanna
I-307-1	Jouret-Epstein, Ellen
I-308-1	Judd, Mark S.
I-308-2	Judd, Mark S.
I-308-3	Judd, Mark S.
I-309-1	Kaczynski, Jeremy M.
I-310-1	Kahkejian, Deborah
I-311-1	Kahn, Joanne, 21st Century Park on the Outer Harbor Inc.
I-312-1	Kaplowe, Stephen
I-313-1	Karas, Alex
I-314-1	Kawa, Michelle
I-315-1	Keady, Kathleen A., Office Manager, Gardner Plus Architects, PLLC
I-316-1	Kerrigan, Scott
I-317-1	Ketola, George
I-318-1	Kimball, Hubert D.
I-319-1	Kinder, Drew
I-320-1	King, Derek
I-321-1	King, Jessica
I-322-1	Kirkendall, Scott
I-323-1	Klatt, Bonnie
I-324-1	Klepfer, Marcia
I-325-1	Klion, Bruce
I-326-1	Klug, Judith
I-327-1	Koch, Frances
I-328-1	Kompinski, CS
I-328-2	Kompinski, CS
I-329-1	Konder, George C.
I-329-2	Konder, George C.
I-330-1	Kontrabecki, James
I-331-1	Koplik, Mark

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I-332-1	Kostran, Jan
I-333-1	Kozaczka, Stanley J.
I-333-2	Kozaczka, Stanley J.
I-334-1	Kraska, Robert
I-335-1	Kratz, Josh
I-336-1	Krekeler, Paul
I-337-1	Kruzynski, Mari-Beth
I-338-1	Kurtik, Edward
I-339-1	Kurtik, Elizabeth
I-339-2	Kurtik, Elizabeth
I-340-1	Kurya, Jamie
I-341-1	Kustyn, David M.
I-342-1	Lacari, Mark
I-342-2	Lacari, Mark
I-342-3	Lacari, Mark
I-343-1	Lancellotti, Frank
I-344-1	Langner, Guenther
I-344-2	Langner, Guenther
I-344-3	Langner, Guenther
I-344-4	Langner, Guenther
I-345-1	Langone, Louis C.
I-345-2	Langone, Louis C.
I-346-1	Lankenau, Susan
I-346-2	Lankenau, Susan
I-347-1	Lannier, Monica, D.S. Ray Middle School
I-348-1	Lasher, Ed
I-349-1	Lashgar, Shaghafegh, D.S. Ray Middle School
I-350-1	Lautz, Ellen
I-351-1	Leone, Corey
I-352-1	Leppere, Barney
I-353-1	Levy, Josette
I-354-1	Lewandowski, Karen
I-355-1	Lewandowski, Nancy J.
I-356-1	Lezynski, Scott
I-357-1	Lindblad, K.A.
I-358-1	Loeser, Sara
I-359-1	Lofaro, Cynthia
I-360-1	LoFaso, Fred
I-361-1	Lofft, Patrick M.
I-362-1	Lombardo, Rosemary
I-363-1	Long, Joseph & Susan
I-364-1	Lotto, Peter
I-365-1	Loughlin Jr., Tom
I-365-2	Loughlin Jr., Tom
I-366-1	Lum, David
I-367-1	Lundgren, Faith, D.S. Ray Middle School
I-368-1	Lupia, Charles
I-369-1	Macdonald, Roderick
I-370-1	Mackiewicz, Cheryl A.
I-370-2	Mackiewicz, Cheryl A.
I-371-1	Macri, David
I-372-1	Ziehm, Linda
I-373-1	Maderi, Denny

COMMENT #	COMMENTER
I-374-1	Madison, Dale
I-374-2	Madison, Dale
I-374-3	Madison, Dale
I-374-4	Madison, Dale
I-375-1	Malecki, Joanne
I-376-1	Malone, Evelyn
I-377-1	Mandanas, Linda
I-378-1	Mantell, Amy
I-379-1	Marcus, Aaron
I-379-2	Marcus, Aaron
I-380-1	Markiewicz, Jacob
I-381-1	Martin, April
I-382-1	Martin, Ben, Communication Manager , CURE International
I-383-1	Martin, Sharon
I-384-1	Mathieu, Richard
I-385-1	Mathner, Susan
I-386-1	Maurer, Maggie
I-386-2	Maurer, Maggie
I-387-1	McFarland, Jay
I-388-1	Maziarczyk, Michael
I-389-1	Mazura, Christopher
I-390-1	McColl, William
I-390-2	McColl, William
I-390-3	McColl, William
I-391-1	McElduff, Kelsey
I-391-2	McElduff, Kelsey
I-391-3	McElduff, Kelsey
I-392-1	McLaughlin, David
I-393-1	McLeod, Caitlin
I-394-1	McMahon, Thomas J.
I-395-1	McNally, Megan
I-396-1	Mead, Jeffrey
I-397-1	Meara, Thomas
I-398-1	Merriman, Leigh
I-399-1	Merzbach, Ralph K., Attorney, Merzbach Law Office, P.C.
I-400-1	Messere, Fritz
I-400-2	Messere, Fritz
I-400-3	Messere, Fritz
I-401-1	Mietlicki, James F.
I-401-2	Mietlicki, James F.
I-401-3	Mietlicki, James F.
I-401-4	Mietlicki, James F.
I-402-1	Mignogna, James E.
I-403-1	Miller, Chey
I-403-2	Miller, Chey
I-403-3	Miller, Chey
I-403-4	Miller, Chey
I-403-5	Miller, Chey
I-403-6	Miller, Chey
I-403-7	Miller, Chey
I-403-8	Miller, Chey
I-404-1	Miller, Douglas
I-405-1	Miller, Henry T.

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I-406-1	Miller, Michael J.
I-407-1	Miller, Phillip
I-408-1	Miller, Ted
I-408-2	Miller, Ted
I-408-3	Miller, Ted
I-409-1	Moden, Karen
I-410-1	Moll, William
I-410-2	Moll, William
I-410-3	Moll, William
I-410-4	Moll, William
I-410-5	Moll, William
I-410-6	Moll, William
I-410-7	Moll, William
I-411-1	Mooney, Mike
I-412-1	Moore, Greg D., CEO, QuiCR
I-412-2	Moore, Greg D., CEO, QuiCR
I-413-1	Moore, Richard
I-414-1	Moore, Scott
I-415-1	Moretta, Justin
I-416-1	Morgan, Richard
I-417-1	Morris, Andy
I-418-1	Morris, Fallon, D.S. Ray Middle School
I-419-1	Mortensen, Annette
I-420-1	Mount, Lee and Elaine
I-421-1	Mount, Timothy
I-422-1	Murphy, Daniel
I-423-1	Murphy, John J.
I-424-1	Namynanik, Mike
I-425-1	Nardone, Candice
I-426-1	Nassimos, Joe
I-427-1	Nedwick, Darlene
I-428-1	Neffke, Ronald E.
I-429-1	Neish, Devon, D.S. Ray Middle School
I-430-1	Nerode, Nathaneal
I-430-2	Nerode, Nathaneal
I-430-3	Nerode, Nathaneal
I-430-4	Nerode, Nathaneal
I-430-5	Nerode, Nathaneal
I-431-1	Newton, Theresa
I-432-1	(No Last Name), Nico
I-433-1	Nicolaysen, Bryan
I-433-2	Nicolaysen, Bryan
I-434-1	Nielson, Eric
I-435-1	Nimphius, Donald J.
I-435-2	Nimphius, Donald J.
I-436-1	Nithikasem, Surasit
I-436-2	Nithikasem, Surasit
I-437-1	Noblin-Jackson, Lisa A.
I-438-1	Nolan, CPA, Rita M.
I-439-1	Nordheim, Shirley
I-440-1	Nowak, Elizabeth L.
I-441-1	Nuzback, Michael
I-442-1	Olds Sr., Dennis F.

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I-442-2	Olds Sr., Dennis F.
I-442-3	Olds Sr., Dennis F.
I-442-4	Olds Sr., Dennis F.
I-443-1	Olexenko, Peter
I-444-1	Zweig, Brian
I-445-1	Oswald, Sean
I-446-1	P., Ajay
I-447-1	Paarlberg, John
I-448-1	Paladino, Scotty
I-448-2	Paladino, Scotty
I-449-1	Palmer, Ada
I-449-2	Palmer, Ada
I-450-1	Palmer, Eugene
I-451-1	Palmer, Richard
I-452-1	Palvino, Jack
I-453-1	Paolini, Edward
I-454-1	Paolini, Margaret A.
I-455-1	Paradowski, Mark
I-456-1	Parke, Richard
I-457-1	Parker, Christine
I-458-1	Parrotte, Jeffrey M.
I-459-1	Parsons, W.T.
I-460-1	Patalita, John
I-461-1	Patierno, Michael
I-462-1	(No Last Name), Patricia
I-463-1	Pawenski, Chris
I-463-2	Pawenski, Chris
I-464-1	Pawensla, Chris
I-465-1	Pawlowski, Lenore
I-466-1	Pellingra, Justin
I-467-1	Pellman, John
I-467-2	Pellman, John
I-467-3	Pellman, John
I-468-1	Pena, Oscar
I-469-1	Pescrillo, Jordan
I-470-1	Peters, Ariel
I-471-1	Peterson, Lorna
I-471-2	Peterson, Lorna
I-472-1	Petko, Stephen
I-473-1	Phillips, Scott
I-474-1	Piecuch, Sarah
I-474-2	Piecuch, Sarah
I-475-1	Pieniazek, Nicholas
I-476-1	Plaat, Daniel
I-476-2	Plaat, Daniel
I-476-3	Plaat, Daniel
I-477-1	Plante, Gerald
I-478-1	Prenty, Noreen
I-479-1	Preske, Carl
I-479-2	Preske, Carl
I-480-1	Price, Joshua, D.S. Ray Middle School
I-481-1	Priestley, Robert
I-481-2	Priestley, Robert

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I-483-1	Provino, Paul
I-484-1	Pucalski, Christopher
I-485-1	Puckett, Michael
I-486-1	Punturiero, Brian
I-487-1	Puritz, Becky
I-488-1	Pusateri, Robert G.
I-489-1	Putnam, Randal
I-490-1	R., Steve
I-491-1	Rain, Dan
I-492-1	Randazzo, Robert
I-493-1	Rathbun, Susan
I-494-1	Rawls, Brittany
I-495-1	Reamer, Stephen D.
I-495-2	Reamer, Stephen D.
I-496-1	Rebbeor, James
I-497-1	Rebmann, Michael
I-497-2	Rebmann, Michael
I-498-1	Reeher, John
I-498-2	Reeher, John
I-499-1	Reichmuth, Elaine
I-500-1	Render, Dave
I-501-1	Rezak, David
I-502-1	Rezak, Linda
I-503-1	Richards, Charles
I-504-1	Richardson, David
I-504-2	Richardson, David
I-505-1	Riley, Jibreel
I-505-2	Riley, Jibreel
I-506-1	Rittenhouse, Maryanne
I-507-1	Robe, Susan
I-508-1	Roberts, Carol
I-509-1	Rodriguez, Eva
I-510-1	Roertgen, Brandon
I-511-1	Rogers, Amanda
I-512-1	Rogers, Andy
I-513-1	Rogers, Cheryll
I-514-1	Rogers, John
I-515-1	Rogge, David
I-516-1	Rohman, Henry Lee
I-516-2	Rohman, Henry Lee
I-517-1	Romanowski, Margaret
I-518-1	(No Last Name), Ronnie
I-519-1	Root, Chris
I-519-2	Root, Chris
I-519-3	Root, Chris
I-520-1	Rose, David
I-521-1	Rose, Joel S.
I-522-1	Rosenberg, Marc
I-523-1	Rosenberg, Nancy
I-523-2	Rosenberg, Nancy
I-524-1	Rotolo, Tom and Barbara
I-525-1	Roy, Eileen
I-526-1	Rumril, Peter

COMMENT #	COMMENTER
I-526-2	Rumril, Peter
I-526-3	Rumril, Peter
I-527-1	(No Last Name), Russ
I-528-1	Russell, CPA, Robert
I-529-1	Sackett, John L.
I-529-2	Sackett, John L.
I-530-1	Sadowski, Emily
I-531-1	Salsburg, Fred
I-531-2	Salsburg, Fred
I-531-3	Salsburg, Fred
I-532-1	Salzyn, John
I-533-1	Samson, Joseph
I-534-1	Sandberg, Glenn
I-535-1	Santiago, Jennifer
I-536-1	Santos, Rob
I-537-1	Savage, Anne
I-538-1	Scammell, G.
I-539-1	Scavo, Dominick
I-540-1	Schanne, Joseph
I-541-1	Scheyer, Lawrence W., Attorney at Law
I-541-2	Scheyer, Lawrence W., Attorney at Law
I-542-1	Schmidt, Dawn
I-543-1	Schou, Bertil
I-544-1	Schroeder, Tim
I-544-2	Schroeder, Tim
I-545-1	Schultz, F. Justin
I-546-1	Seefeldt, Joanne
I-547-1	Seiders, Daniel
I-548-1	Seifritz, Griffin, D.S. Ray Middle School
I-548-2	Seifritz, Griffin, D.S. Ray Middle School
I-548-3	Seifritz, Griffin, D.S. Ray Middle School
I-549-1	Semler, Dylan
I-549-2	Semler, Dylan
I-549-3	Semler, Dylan
I-549-4	Semler, Dylan
I-550-1	Sennett, John
I-551-1	Sexton, Laura
I-552-1	Sexton, Luke
I-552-2	Sexton, Luke
I-553-1	Shanebrook, Robert
I-554-1	Shants, Terry
I-555-1	Shapp, Mark
I-555-2	Shapp, Mark
I-555-3	Shapp, Mark
I-555-4	Shapp, Mark
I-555-5	Shapp, Mark
I-556-1	Shearer, Adam
I-557-1	Sheldon, Jerry
I-558-1	Sheridan, Jim
I-559-1	Shipherd, Sam
I-559-2	Shipherd, Sam
I-560-1	Shusler, Irene
I-561-1	Sillars, Rodger James

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I-562-1	Skill, Lisa
I-563-1	Skompinski, Carl B.
I-563-2	Skompinski, Carl B.
I-563-3	Skompinski, Carl B.
I-564-1	Skowron, Frank
I-565-1	Smcarelli, (No First Name)
I-566-1	Smietana, Sophie
I-567-1	Smigelski, Casey
I-568-1	Smith, David C.
I-568-2	Smith, David C.
I-568-3	Smith, David C.
I-569-1	Smith, Max
I-569-2	Smith, Max
I-569-3	Smith, Max
I-569-4	Smith, Max
I-570-1	Tanti, Carol
I-571-1	Smith, Robert
I-571-2	Smith, Robert
I-572-1	Smith, Stephen
I-573-1	Smithling, Cody
I-573-2	Smithling, Cody
I-574-1	Smith, Wayne
I-575-1	Snodgrass, Randall
I-576-1	Soman, Sheldon
I-576-2	Soman, Sheldon
I-577-1	Sopchak, Carl
I-577-2	Sopchak, Carl
I-578-1	Spadafore, Mark
I-579-1	Spula, Jack Bradigan
I-580-1	Stadler, Rebecca
I-581-1	Staley, Bian
I-582-1	Stamm, Corina
I-583-1	Stanlis, Ingrid
I-584-1	Stark, Barry E.
I-585-1	Stevens, Marty
I-586-1	Stewart, Jr., Robert J.
I-587-1	Stieger, Matt
I-588-1	Stimmer, Jonathan
I-588-2	Stimmer, Jonathan
I-588-3	Stimmer, Jonathan
I-588-4	Stimmer, Jonathan
I-588-5	Stimmer, Jonathan
I-589-1	Stockman, Mark, Emergency Relief Unit, Local Programs Bureau, NYS Department of Transportation
I-589-2	Stockman, Mark, Emergency Relief Unit, Local Programs Bureau, NYS Department of Transportation
I-589-3	Stockman, Mark, Emergency Relief Unit, Local Programs Bureau, NYS Department of Transportation
I-589-4	Stockman, Mark, Emergency Relief Unit, Local Programs Bureau, NYS Department of Transportation
I-589-5	Stockman, Mark, Emergency Relief Unit, Local Programs Bureau, NYS Department of Transportation
I-589-6	Stockman, Mark, Emergency Relief Unit, Local Programs Bureau,

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	NYS Department of Transportation
I-589-7	Stockman, Mark, Emergency Relief Unit, Local Programs Bureau, NYS Department of Transportation
I-589-8	Stockman, Mark, Emergency Relief Unit, Local Programs Bureau, NYS Department of Transportation
I-590-1	Stokes, Belle Louise
I-591-1	Stowe, Richard
I-591-2	Stowe, Richard
I-591-3	Stowe, Richard
I-592-1	Stuczynski, Ken JP
I-593-1	Sullivan, E.B.
I-594-1	Sullivan, Susan
I-595-1	Sunser, Penny
I-596-1	Sweat, Laura
I-597-1	Sweeney, Cameron, D.S. Ray Middle School
I-597-2	Sweeney, Cameron, D.S. Ray Middle School
I-597-3	Sweeney, Cameron, D.S. Ray Middle School
I-598-1	Swift, Adam
I-599-1	Szczupak, Anne
I-600-1	Taibi, John
I-600-2	Taibi, John
I-600-3	Taibi, John
I-600-4	Taibi, John
I-600-5	Taibi, John
I-600-6	Taibi, John
I-600-7	Taibi, John
I-601-1	Tanck, Carol
I-602-1	Tanck, Ron
I-603-1	Taylor, Charles
I-604-1	Taylor, Elizabeth
I-604-2	Taylor, Elizabeth
I-605-1	Tedesco, Greg
I-606-1	Terenzetti, Terry
I-607-1	Terrana, Tammy L.
I-608-1	Terry, Carol
I-609-1	Teter, Edward and Barbara
I-610-1	Thomas, Erin
I-611-1	Thompson, Ted
I-611-2	Thompson, Ted
I-611-3	Thompson, Ted
I-611-4	Thompson, Ted
I-612-1	Thurges, J.
I-613-1	Tobin, Dave
I-614-1	Tonning, Nils A.
I-615-1	Torcello, Frank
I-616-1	Trinder, Stephen
I-617-1	True-Frost, Cora
I-618-1	Trufelman, Lloyd
I-619-1	Tulloch, Timothy
I-619-2	Tulloch, Timothy
I-619-3	Tulloch, Timothy
I-620-1	Michaelson, Kirsten
I-620-2	Michaelson, Kirsten

COMMENT #	COMMENTER
I-620-3	Michaelson, Kirsten
I-621-1	Tylicke, Scott
I-622-1	Umhauer, Kitty
I-623-1	Valerio, John
I-624-1	Vallalonga, Damian
I-625-1	Mink, Dan
I-626-1	Van Ness, Cynthia
I-627-1	Van Patten, Chris
I-627-2	Van Patten, Chris
I-628-1	Van Riper, Daniel W.
I-629-1	Van Valin, Robert
I-630-1	Vaughan, Ph.D., Raymond C.
I-630-2	Vaughan, Ph.D., Raymond C.
I-630-3	Vaughan, Ph.D., Raymond C.
I-630-4	Vaughan, Ph.D., Raymond C.
I-631-1	Venturi, Jim
I-631-2	Venturi, Jim
I-631-3	Venturi, Jim
I-631-4	Venturi, Jim
I-632-1	Verburg, Tom
I-633-1	Vester, Nathan
I-634-1	Vincent, Jim
I-635-1	Vitale, Joe
I-636-1	Volcko, Meghan, D.S. Ray Middle School
I-637-1	Waack, Peter
I-638-1	Walsh, Charles
I-639-1	Walter, Christine
I-640-1	Walter, Robert C.
I-640-2	Walter, Robert C.
I-641-1	Walters, John
I-641-2	Walters, John
I-641-3	Walters, John
I-642-1	Walton, Richard
I-642-2	Walton, Richard
I-643-1	Wang, Jason
I-643-2	Wang, Jason
I-644-1	Warner, Tom
I-645-1	Washer, Steve
I-646-1	Wasiutynski, Christopher
I-646-2	Wasiutynski, Christopher
I-646-3	Wasiutynski, Christopher
I-646-4	Wasiutynski, Christopher
I-646-5	Wasiutynski, Christopher
I-646-6	Wasiutynski, Christopher
I-646-7	Wasiutynski, Christopher
I-646-8	Wasiutynski, Christopher
I-646-9	Wasiutynski, Christopher
I-646-10	Wasiutynski, Christopher
I-646-11	Wasiutynski, Christopher
I-646-12	Wasiutynski, Christopher
I-646-13	Wasiutynski, Christopher
I-646-14	Wasiutynski, Christopher
I-646-15	Wasiutynski, Christopher

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I-646-16	Wasiutynski, Christopher
I-646-17	Wasiutynski, Christopher
I-646-18	Wasiutynski, Christopher
I-646-19	Wasiutynski, Christopher
I-647-1	Waszkiewicz, Ed (Butch)
I-648-1	Weekes, Michael
I-648-2	Weekes, Michael
I-648-3	Weekes, Michael
I-649-1	Welch, Alan
I-649-2	Welch, Alan
I-650-1	Welker, Richard
I-651-1	Wells, Maurice
I-652-1	Westcott, Lynn
I-653-1	Westermann, Kevin
I-654-1	Whipple, John
I-654-2	Whipple, John
I-655-1	White, Toney
I-656-1	Moskowitz, Ed (Butch)
I-656-2	Moskowitz, Ed (Butch)
I-656-3	Moskowitz, Ed (Butch)
I-657-1	Wiesner, Devin
I-658-1	Williams, Collin
I-659-1	Williams, Maureen R.
I-660-1	Wilson, Bonnie
I-660-2	Wilson, Bonnie
I-661-1	Winship, Micah
I-662-1	Wisinski, Patrick J.
I-663-1	Wnorowski, Mark
I-663-2	Wnorowski, Mark
I-663-3	Wnorowski, Mark
I-663-4	Wnorowski, Mark
I-664-1	Wokan, Sara
I-665-1	Wolf, Phillips
I-666-1	Wolfe, Greg
I-667-1	Wolfe, Wm. F.
I-667-2	Wolfe, Wm. F.
I-667-3	Wolfe, Wm. F.
I-668-1	Wolff, Adam
I-669-1	Woolley, Jonathan
I-669-2	Woolley, Jonathan
I-669-3	Woolley, Jonathan
I-669-4	Woolley, Jonathan
I-669-5	Woolley, Jonathan
I-669-6	Woolley, Jonathan
I-670-1	Wozniak, Mark
I-671-1	Wright, Nancy
I-672-1	Yanik, John S.
I-673-1	Young, Dennis
I-673-2	Young, Dennis
I-674-1	Young, Jennifer
I-675-1	Young, Michael
I-676-1	Zaffuts, Michael
I-677-1	Zalucki, Richard

COMMENT #	COMMENTER
I-678-1	Zamow, Allie
I-679-1	Zarabozo, Peter
I-680-1	Roate, Connell
I-681-1	Robinson, Martin
I-682-1	Switzer, James
I-682-2	Switzer, James
I-683-1	Tucker, Donald
I-683-2	Tucker, Donald
I-684-1	Wieczorek, Rich
I-684-2	Wieczorek, Rich
I-685-1	Alberin, Ken
I-686-1	Russell, Gary
I-686-2	Russell, Gary
I-687-1	Barren, Dan
I-687-2	Barren, Dan
I-687-3	Barren, Dan
I-688-1	Behr, Michael
I-688-2	Behr, Michael
I-688-3	Behr, Michael
I-688-4	Behr, Michael
I-689-1	Berger, Richard G.
I-689-2	Berger, Richard G.
I-689-3	Berger, Richard G.
I-690-1	Myers, Tom
I-690-2	Myers, Tom
I-691-1	Catalli, Joseph
I-692-1	Cates, David
I-692-2	Cates, David
I-692-3	Cates, David
I-692-4	Cates, David
I-693-1	Chelbach, Sue
I-694-1	Tsotsky, Richard
I-694-2	Tsotsky, Richard
I-694-3	Tsotsky, Richard
I-694-4	Tsotsky, Richard
I-695-1	Cupoli, Edward
I-696-1	Stone, Jeff
I-696-2	Stone, Jeff
I-696-3	Stone, Jeff
I-696-4	Stone, Jeff
I-697-1	Doff, Frank C.
I-698-1	Ebina, Alexander
I-698-2	Ebina, Alexander
I-698-3	Ebina, Alexander
I-699-1	Elias, Byron
I-700-1	Ellis, Tom
I-700-2	Ellis, Tom
I-700-3	Ellis, Tom
I-700-4	Ellis, Tom
I-701-1	Olejniczak, Hank
I-701-2	Olejniczak, Hank
I-701-3	Olejniczak, Hank
I-701-4	Olejniczak, Hank

COMMENT #	COMMENTER
I-702-1	Giles, Elizabeth
I-702-2	Giles, Elizabeth
I-702-3	Giles, Elizabeth
I-703-1	Glass, Bradley
I-704-1	Greenburg, Richard
I-704-2	Greenburg, Richard
I-705-1	Haremza, Jason
I-705-2	Haremza, Jason
I-705-3	Haremza, Jason
I-705-4	Haremza, Jason
I-706-1	Hellwitz, Bob
I-707-1	Hubiak, Joe
I-708-1	Thomas, Colin Fox
I-708-2	Thomas, Colin Fox
I-708-3	Thomas, Colin Fox
I-709-1	Lepine, Maurice
I-709-2	Lepine, Maurice
I-710-1	Love, John C.
I-710-2	Love, John C.
I-710-3	Love, John C.
I-711-1	Maray, Carl, Licensed Professional Engineer, RL Banks
I-711-2	Maray, Carl, Licensed Professional Engineer, RL Banks
I-712-1	Pyke, Gayle

Commenter	Ackerman, Lauren
Comment I-1-1	I'm all for faster train service upstate, but why is there never a move to reintroduce rail service from NYC, through PA and up to Binghamton where you have a major university and then moving on to Niagara etc.
Response	Thank you for your comment on the HSR Empire Corridor Program. The program considers improvement alternatives for the Empire Corridor. The route mentioned (Pocono Corridor) is approximately 80 miles south of the Empire Corridor and does not service the same cities as the Empire Corridor.
Commenter	Acquisto, Michelle
Comment I-2-1	If there was a way to protect homes, the environment and historical land and sites, I am in favor of Alternative Plan 125.
Response	NYSDOT's goal is to avoid and minimize adverse impacts to the greatest extent possible. Alternative 125 was designed to help cut the distance between Albany and Syracuse by 14 miles, but one of the major drawbacks of this route is that it passes to the south of the stations on the current Empire Corridor in the Mohawk Valley between Syracuse and Albany. Therefore, 125 express service would not serve Rome, Utica, Amsterdam, and Schenectady. The Preferred Alternative, Alternative 90B, was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance. This detailed analysis, as outlined in the Tier 1 FEIS, examined the best method for avoiding and minimizing impact to features like homes, the environment and historical land sites.
Commenter	Acton, Brion
Comment I-3-1	I do not support any of the proposed options for one reason, our current road and bridge infrastructure need repair/improvement far more than the addition of a high speed rail line.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 EIS.
Commenter	Adams, Rev. Bud
Comment I-4-1	I wholeheartedly support the implementation of safe high-speed rail service across New York State. The benefits are many: jobs for construction and for long-term maintenance, local economics near train stations, substantially reduced travel times, and fewer cars on the thruway resulting in a reduction in emissions are but a few.
Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B would shorten the trip from New York City to Niagara Falls by 1½ hours and would substantially reduce highway emissions over the Base Alternative.
Commenter	Zizzi, Annamarie
Comment I-5-1	We have been waiting for high speed rail for years when it was promised. I have stopped taking the train because its so slow and so have others. We would love to take the train again on high speed rail.
Response	Your view and comments have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B would shorten the trip from

	New York City to Niagara Falls by 1½ hours and would result in the best overall on-time performance for Amtrak service in 2035.
Commenter	Akkoul, Sharon
Comment I-6-1	I am very much in favor of a high-speed rail option between the 2 cities. The current rail options are not truly an alternative to flying. Often, I drive to Albany in order to be able to take the train to NYC. Reducing the total travel time to 3 or 4 hours between the 2 cities will make it easier for business and leisure travelers, and aid in improving the upstate economy.
Response	Comments from the public have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B would shorten the trip from New York City to Niagara Falls by 1½ hours and would also double the frequency of service to destinations along Empire Corridor West.
Commenter	Aldridge, Zachary Steiner
Comment I-7-1	the prospect of a high speed railway linking the state is a definitive "yes." Environmental concerns are minimal (especially considering the reduced emissions from a populace taking trains instead of driving cars), economic opportunities are inevitable and the image it would provide of our state would be exemplary. All of Europe is connected by rails, why can't we be?
Response	Thank you for your comment in support of the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. The net annual operational benefits for the Preferred Alternative would be roughly equivalent to eliminating the emissions associated with the energy and electricity consumption of 2,500 to 4,200 average U.S. single family homes every year.
Commenter	Alfes, Keith
Comment I-8-1	As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons: -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee,

tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter Alfes, Kim

Comment
I-9-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

- The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
- The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
- The Terminal is centrally located within a two-mile radius of city-center
- The Terminal also has secure parking facilities for up to 450 vehicles
- The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
- The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the prior response.

Commenter Allentoff, Norman

Comment
I-10-1 With the shrinking resources available in Upstate NY, I believe that pie-in-the-sky proposals such as high speed light rail hoped for by our esteemed Louise Slaughter should be abandoned for the time being.

What Upstate needs is upgrading of the CSX tracks and the small additions to them needed to eliminate the passenger delays now required for the first priority passage of the CSX freights, resulting in elimination of the frequent delays in passenger schedules which now preclude reliable, on time service.

Response Thank you for your comment on the HSR Empire Corridor Program. Alternatives 90B and 110 would restore large sections of third and fourth track, but Alternative 90B would constrain more of the additional trackage to the existing right-of-way, substantially reducing costs and impacts. Alternative 125 would create a dedicated, 2-track passenger right-of-way over much of the Empire Corridor. Based on this, and resulting lower costs and impacts, Alternative 90B has been selected as the Preferred Alternative. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter Allin, Christopher

Comment
I-11-1 An improved rail network including upgrades and high speed trains and service, creating an efficient network connecting downstate to upstate and then to Western New York.

Response	Your comments in support of the High Speed Empire Corridor Program have been considered in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B would shorten the trip from New York City to Niagara Falls by 1½ hours and would also double the frequency of service to destinations along Empire Corridor West.
Commenter	Almer, Carl
Comment I-12-1	I just wish to express my strong support for a high-speed component to the Empire Corridor. High-Speed passenger rail, especially with a dedicated line, would have a great impact on western New York (not to mention the Hudson Valley). It would provide connections between the three large cities in the area, creating the synergy between them that is often talked about but actually rarely seen.
Response	Comments from the public have been considered in the selection of Alternative 90B as the Preferred Alternative. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and would also double the frequency of service to destinations along Empire Corridor West.
Commenter	Ambrosino, Arthur Michael, Great Sacandaga Lake Deepening Project, Great Sacandaga Lake Deepening Project
Comment I-13-1	This project is long overdue, I commend you for moving it forward. I am the president of the Great Sacandaga Lake Deepening Project. This freshwater Impoundment project will be paid for by the mineral wealth of the GSL. The GSL will contain between 200 and 600 Billion EXTRA gallons of freshwater that can be used for downstate, in an emergency, depending on how deep we deepen the lake. It would be exceedingly smart to bury the piping infrastructure underneath the railroad right-of-way....
Response	Thank you for your comment supporting for the High Speed Rail (HSR) Empire Corridor Program. Our program is focused on improving intercity rail passenger service between New York City and Niagara Falls. Your proposal to share the right of way for multiple purposes would require further study, since the railroad companies own the property.
Commenter	Amicucci, Barbara
Comment I-14-1	Alternative 90B is my first choice, with Alternative 110 as my second. I really want Utica to remain a stop either way.
Response	Your comments supporting Alternatives 90B/110 and preserving intercity rail passenger service for the City of Utica have been considered in the selection of Alternative 90B as the Preferred Alternative. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Because of the required property acquisitions, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance. Alternative 90B will provide improvements in service to currently served cities, such as Utica. One of the drawbacks of Alternative 125 is that express service would not be directly provided to Niagara Falls, Rome, Utica, Amsterdam, and Schenectady.
Commenter	Andrle, Christopher
Comment I-15-1	As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons: -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.

-The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York

-The Terminal is centrally located within a two-mile radius of city-center

-The Terminal also has secure parking facilities for up to 450 vehicles

-The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development

-The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degree programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter **Anonymous**

Comment I-16-1 The 125 option will not benefit the trains to Toronto and Chicago; the 90B and 110 options will, as an added effect, benefit these trains.

Response You are correct in recognizing that the equipment in the 125 Alternative may not be compatible with trains currently operated to Toronto and Chicago. It is an accurate assumption that these trains could benefit from operating on the 90B and 110 Alternatives. Your comment has been considered in the selection of Alternative 90B as the Preferred Alternative by the FRA and NYSDOT.

Commenter **Anonymous, D.S. Ray Middle School, D.S. Ray Middle School**

Comment I-17-1 No, I wouldn't support this idea of High Speed Rail because why waste money on this and not donate this money to cancer research.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the review of the Tier 1 EIS.

Commenter **Anonymous, D.S. Ray Middle School, D.S. Ray Middle School**

Comment I-17-2 Even though it would be great to get to places faster, this is also polluting the air.

Response Comments from the public are an important part of the review process for the Tier 1 EIS for the High Speed Rail Empire Corridor Program. Section 4.19 of the Tier 1 EIS describes the air quality analysis performed, which indicates that no significant adverse air quality impacts are expected. Moreover, with the diversion of travelers to rail, the net annual operational benefits for the Preferred Alternative would be roughly equivalent to

	eliminating the emissions associated with the energy and electricity consumption of 2,500 to 4,200 average U.S. single family homes every year.
Commenter	Anonymous
Comment I-18-1	support any enhancements to the Empire Corridor - have Them be incremental – don't do a project and say "now we're done"
Response	Incremental improvements will occur during the course of constructing the different components of the Preferred Alternative. Alternative 90B would begin conferring travel benefits within 2-5 years of the start of construction. The implementation of service initiatives and completion of the different project components are outlined in the Service Development Plan.
Commenter	Anonymous
Comment I-18-2	Do promotions!! I am 58 years old and am awe That many of my friends have never ridden a train.
Response	Thank you for comments on public outreach and education. Your support has been considered by the FRA and NYSDOT in selecting the Preferred Alternative.
Commenter	Anonymous
Comment I-18-3	Please, please focus on being on time. Also, frequency of trains is important for flexibility in travel plans. MPH is an easy reference for comparisons, by frequency & punctuality will lead To a more sustainable level of ridership.
Response	Key goals of the New York State High Speed Rail program will be to improve reliability, on-time performance, and provide additional trains to the communities along the Empire Corridor in western New York, which will address the concerns you outlined in your comment. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and would result in the best overall on-time performance for Amtrak service in 2035. Alternative 90B, the Preferred Alternative, would also double the frequency of service to destinations along Empire Corridor West.
Commenter	Anonymous
Comment I-19-1	Bring is on! But without the government!
Response	Your comment in support of the High Speed Rail Empire Corridor Program has been considered in the review process for the Tier 1 EIS. Your suggestion is acknowledged relating to support of the project from the public sector.
Commenter	Anonymous
Comment I-20-1	We need a statewide intercity travel ridership survey. Without this, ridership for high speed options is underestimated, due to omitting people who drive from (e.g.) Watertown to catch trains at Syracuse.
Response	Thank you for your comment, on the need to accurately forecast the demand for ridership for intercity rail service along the Empire Corridor. A detailed ridership analysis was conducted for each of the alternatives discussed in the Tier 1 Environmental Impact Statement (EIS) for the High Speed Rail Empire Corridor Program. Analyzing the demand for ridership has been an important consideration in selecting the Preferred Alternative.
Commenter	Anonymous

Comment I-21-1	I support High Speed Rail 100%! Let's get this country up to speed w/ Europe. The sooner the better!
Response	Thank you for comments on the High Speed Rail Empire Corridor Program, your support has been considered by the FRA and NYSDOT in selecting the Preferred Alternative.
Commenter	Anonymous
Comment I-22-1	At the present time I think the funds you are planning to use on a high speed railroad could be put to better use. Those funds should be used to repair roads and bridges that the average NY State resident has to use daily to go to work or other daily living needs. When these thing are improved then think about the high speed rail systems.The average person in NY will never use the high speed rail system but they do use the roads and bridges each day.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 EIS.
Commenter	Anonymous
Comment I-23-1	I-81 tear it down and leave it down.
Response	Thank you for your comment on I-81, but it is outside the scope of the High Speed Rail Empire Corridor Program. You can also visit the I-81 webpage on the NYSDOT website, and express your opinion.
Commenter	Anonymous
Comment I-24-1	Exclusive passenger tracks are needed to avoid freight-induced delays.
Response	Your comment discussing the need for additional tracks along the Empire Corridor has been considered by the FRA and NYSDOT in selecting Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Anonymous
Comment I-25-1	At alternative 110 (or 125), it becomes faster and more reliable to drive from Ithaca to Syracuse and take the train from there to NYC than it is to take the direct bus from Ithaca to NYC.
Response	Thank you for your comment on how faster rail service in Alternatives 110 (or 125) will encourage ridership on the Empire Corridor. In selecting Alternative 90B as the Preferred Alternative for the High Speed Rail Empire Corridor Program, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts. Alternative 90B would involve less right-of-way and environmental impacts than Alternatives 110 and 125 and would also shorten the trip from New York City to Niagara Falls by 1½ hours. This alternative would result in the best overall on-time performance for Amtrak service in 2035 and would also double the frequency of service between Albany and Buffalo.
Commenter	Anonymous

Comment I-26-1	The trestle bridges over Howland Wildlife Refuge (if I remember correctly) are one of the slowest points on the route (10 miles per hour perhaps?). Any option needs to replace these “slow spots” with full-speed track. ASAP.
Response	Your comment points out the operating constraints the rail bridge over the Seneca River near the Northern Montezuma Wildlife Management Area(which includes Howland Island) places on train operations on the route. The speed restriction for this bridge is currently 40 mph. Under the Preferred Alternative, the speed restriction will be improved. Future operating speeds will be established during final design.
Commenter	Anthony, Sam, Erdman Anthony, Erdman Anthony
Comment I-27-1	Average 1 way flight = \$100 x 600 = \$60,000 On 1 Monday If price train at air rate and get to NYC in 2 hours, 1 way revenue = \$60,000, 2-way = \$120,000 Annual Rev = 120,000 * 50 weeks = \$6 million At the public info meeting the HNTB staff person told me my numbers were not real and that the Niagara to Albany run could not be justified
Response	Your comments on the revenue possibilities for rail service and competitiveness with air service have been considered by NYSDOT and the FRA in the selection of Alternative 90B as the Preferred Alternative. A detailed assessment of market demand and projected ridership was performed for each of the alternatives evaluated in the Tier 1 EIS for the High Speed Rail Empire Corridor Program. Ridership and revenue performance were important considerations in selecting the Preferred Alternative.
Commenter	Applebaum, Richard
Comment I-28-1	The rail system in Upstate NY is very much hampered by the 2 track system. In most cases, we can not rely on rail travel due to possible delays and missing connections. I see high speed rail as a solution to this problem. If high speed rail existed, it would be a wonderful alternative to flying and driving, which does not presently exist.
Response	Thank you for your comment discussing challenges in using the existing rail service, and the opportunities for success for this program. Your comment has been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will reduce travel times between New York City and Niagara Falls by 1 ½ hours in 2035, compared to the Base Alternative. Alternative 90B, the Preferred Alternative, would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Appleton, Ted
Comment I-29-1	The plan to put high speed rail in New York has failure written all over it. The estimated cost of high speed rail along empire corridor as of now is upwards of \$14.7 billion. Even with inflated numbers of estimated ridership, New Yorkers are not going to be willing to give up their vehicles to get around cities like Buffalo, Syracuse, Rochester, and Albany, which lack the public transportation of NYC. There are nearly endless reasons that no plan for high speed rail has been put into action.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 EIS. The cost of Alternative 90B, the Preferred Alternative, is substantially less (almost 1/3 less) than the most costly alternative (Alternative 125), which was a major consideration in

its selection. The subsidy for the Preferred Alternative (Alternative 90B) would be \$13 per rider, which would be lower than both Alternative 125's subsidy per rider of \$14 and the Base Alternative's subsidy per rider of \$17 per rider.

Commenter Aselin, Don

Comment I-30-1 Unless trains go 150 - 210 mph it may not be worth the investment ? Bullet train from London to Paris is a good example of the good fast train !

Response Thank you for your comment on the need for trains to operate at higher speeds than the different Build Alternatives evaluated in the Tier 1 EIS for the High Speed Rail Empire Corridor Program. During the selection of the alternatives for review in the Tier 1 EIS, alternatives with speeds of 160 mph and 220 mph were considered, but were not advanced, in part because they would bypass all but four of the existing stations along Empire Corridor West. Moreover, it was also determined that operating trains at higher speeds would have greater impact on the environment, require more financial investment to construct and require more public resources to operate than the Preferred Alternative. Comments from the public have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.

Commenter Ashton, Timothy W.

Comment I-31-1 The connection to NYC is obviously important for Buffalo, but at the other end, the connection to Toronto is similarly significant and can be missed.

Response Thank you for your comment on opportunities on the western end of the Empire Corridor to connect Buffalo and Toronto. Currently, the High Speed Rail Empire Corridor Program is focused on improvements between New York City and Niagara Falls. The program will improve service that operates along Empire Corridor, including Maple Leaf service that continues into Toronto. Suggestions and recommendations by the public, for improvements to the service, have been considered in the development of the Service Development Plan. Further improvements or enhancements to the service can be studied in the future, and operating timetables can be further developed as part of Tier 2 assessments.

Commenter Ashton, Timothy W.

Comment I-31-2 When there is good high speed service from Toronto to NYC, everyone will benefit and the value of the investment in New York State will be greatly increased.

Response Thank you for your comment on how everyone will benefit from improvements to the route, when trip times are improved between New York City and Toronto. In the Preferred Alternative (Alternative 90B), the train on the Empire Corridor to Toronto will be able to utilize the improved infrastructure and will have a reduction in trip times, which would achieve the goals you outline in your comment.

Commenter Askeland, Richard A.

Comment I-32-1 After attending the public hearing in Syracuse on 5 March 2014, feel that alternative 110 offers the best plan for improving the NY State rail passenger program. We need dedicated track for passenger service---and we don't want to short-change populations that live close to the Empire Corridor West, by eliminating stops.

Response Thank you for your comment in support of 110 Alternative. In selecting Alternative 90B as the Preferred Alternative for the High Speed Rail Empire Corridor Program, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts. Alternative 90B would also shorten the trip from New York City to Niagara Falls by 1½ hours. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and

	passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property.
Commenter	Askeland, Richard A.
Comment I-32-2	<p>It must be improved. In light of climate change - we need to reduce our carbon imprint. We must promote train travel to reduce out imprint; offer alternatives to car and plane travel and stimulate our N.Y. State economy by providing economic linkages between communities.</p> <p>I think Alternative 110 offers a good start. It doesn't provide the kind of speed that Japan has attained with the "Bullet" train that I rode in the 1960's - but we can improve in increments.</p>
Response	Thank you for your comment discussing the need to use rail service to reduce our carbon footprint, along with improving the connectivity and economy of the communities along the Empire Corridor. Your comment has been considered by the FRA and NYSDOT in the selection of Alternative 90B (over Alternative 110) as the Preferred Alternative, for the reasons outlined above.
Commenter	Askin, Tim
Comment I-33-1	<p>As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:</p> <ul style="list-style-type: none"> -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.
Commenter	Backer, Kevin

Comment I-34-1	Please use the Central Terminal in Buffalo for the any and all upcoming rail projects in WNY. This should include the statewide highspeed train, metro rail expansion and any other project. Improvements to the Depew or Exchange street terminals arr foolish with the Central Terminal here in our market.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the stations in Buffalo, New York. Improvement to the passenger rail facilities in the City of Buffalo area is an important goal of the High Speed Rail Empire Corridor Program. NYSDOT has implemented upgrades at the existing rail station at Buffalo-Depew to improve/rehabilitate the parking lot and enhance passenger access to comply with Americans with Disabilities Act requirements. The High Speed Rail Empire Corridor Tier 1 EIS evaluates a range of improvements for the purpose of making decisions on corridor-level service. The focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the prior response.
Commenter	Baco, Meagan
Comment I-35-1	<p>As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:</p> <ul style="list-style-type: none"> -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.
Commenter	Banks, Ariane
Comment	The Buffalo Central Terminal would be a perfect stop for the high speed rail.

I-36-1

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the prior response.

Commenter Banning, Patricia

Comment I-37-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

- The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
- The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
- The Terminal is centrally located within a two-mile radius of city-center
- The Terminal also has secure parking facilities for up to 450 vehicles
- The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
- The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-35-1.

Commenter Barnaba, Alyssa, D.S. Ray Middle School, D.S. Ray Middle School

Comment I-38-1 When high speed rail trains come to New York, I'm hoping they will be fast, reliable, efficient and environment safe. I'm really hope that the high speed rail trains will be fast, because I really think if it was fast, it could help people cut down on being late to places. It could help people how live in Baldwinsville get to Albany and back in one day rather than two. It could help people who live over an hour away from their work.

Response Thank you for your comments supporting the High Speed Rail Empire Corridor Program and for the need for improving rail passenger service on the route. Comments from the public have been considered in the selection by the FRA and NYSDOT of the Preferred Alternative, which will improve reliability, travel times, and frequency of train service.

Commenter Barrick, Joseph

Comment I-39-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

- The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
- The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York

-The Terminal is centrally located within a two-mile radius of city-center
 -The Terminal also has secure parking facilities for up to 450 vehicles
 -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
 -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-35-1.

Commenter Barringer, Brian

Comment I-40-1 I've been a close observer of high speed rail use in Europe and parts of Asia for some time. I see tremendous benefits for its implementation in NYS.

Response Thank you for your comments supporting the High Speed Rail Empire Corridor Program. Public comments have been considered in selection by the FRA and NYSDOT of the Preferred Alternative.

Commenter Barry, C.J.

Comment I-41-1 I vote for the 125 MPH option. \$14.71 billion is an investment in NY state. Rail travel is ecologically-friendly, safe, and progressive.

Response Thank you for your comment supporting the 125 Alternative and the benefits from high speed rail. Public participation in the program was considered in the selection process for the Preferred Alternative. The Preferred Alternative, Alternative 90B, was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance. Because it is situated largely within the existing right-of-way, it can be constructed in substantially less time than Alternative 125 and will begin to confer benefits within 2 to 5 years after start of construction. Unlike the 125 express service, which would bypass existing stations at Schenectady, Amsterdam, Rome, Utica, and Buffalo-Depew, it will improve service to these existing stations.

Commenter Barry, Cindy

Comment I-42-1 I welcome ANY improvement to the current rail system and schedule between Central NY and NYC. I don't even care what option you go with. Anything is better than what we have now.

Response Thank you for your comments supporting the High Speed Rail Empire Corridor Program, which have been considered in the selection of the Preferred Alternative.

Commenter Bartlett, Russ

Comment I-43-1 I am in favor of the 14.7 billion dollar option.

Response Thank you for your comment supporting the 125 Alternative. Public comment has been considered in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B, the Preferred Alternative, would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. Moreover, Alternative 90B would have fewer environmental impacts than Alternative 125 and would also be less

costly. Alternative 125 was dismissed, based on greater impacts to 2,000 to 3,000 acres and higher costs (more than double the costs for the Preferred Alternative). One of the drawbacks of Alternative 125 is that express service would not be directly provided to Niagara Falls, Rome, Utica, Amsterdam, and Schenectady. Alternative 125 would also take the longest time to incur travel benefits due to the time required to acquire and construct the right-of-way.

Commenter Bates, Ann

Comment I-44-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

- The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
- The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
- The Terminal is centrally located within a two-mile radius of city-center
- The Terminal also has secure parking facilities for up to 450 vehicles
- The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
- The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter Bauch, Kevin James

Comment I-45-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

- The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
- The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
- The Terminal is centrally located within a two-mile radius of city-center
- The Terminal also has secure parking facilities for up to 450 vehicles

-The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
 -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the prior response.

Commenter Beal, Daniel

Comment I-46-1 I fully support the improvement of high speed rail in NYS and specifically I support the highest speed possible while still stopping at Utica. In the proposal 110 mph was the highest, but I would definitely support exploring a way to have even greater speeds while still stopping at Utica. Union station in Utica is also a station for the Adirondack Scenic Railroad.

Response Your comments about preserving and offering intercity rail passenger service for the City of Utica has been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was designed to help cut the distance between Albany and Syracuse by 14 miles, but one of the major drawbacks is that it passes to the south of the stations on the current Empire Corridor in the Mohawk Valley between Syracuse and Albany. Therefore, the 125 express service would not serve Rome, Utica, Amsterdam, and Schenectady. The Preferred Alternative, Alternative 90B, was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance. As discussed in Chapter 3 of the Tier 1 FEIS, the Preferred Alternative would increase service to Utica.

Commenter Beal, Daniel

Comment I-46-2 Another missed opportunity could be in Buffalo. The Depew station parking lot is always overcrowded. A new station (replacing Exchange Street) should be added at Buffalo Central Terminal. What a great site to prepare for expansion, with its size and historical value. With Buffalo looking at growing its metro rail, a local line to downtown and the Airport could be run through Buffalo Central Terminal.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Improvement to the passenger rail facilities in the Buffalo area is an important goal of the High Speed Rail Empire Corridor Program. NYSDOT has implemented upgrades at the existing rail station at Buffalo-Depew to improve/rehabilitate the parking lot and enhance passenger access to comply with Americans with Disabilities Act requirements. The High Speed Rail Empire Corridor Tier 1 EIS evaluates a range of improvements for the purpose of making decisions on corridor-level service, including service reliability, service frequency, and train speeds. The focus was on utilizing existing stations along the Empire Corridor including the stations at Buffalo-Depew and Buffalo-Exchange Street. Buffalo Central Terminal was not included in the analysis of the Build Alternatives at this time. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station over the Central Terminal location. Some of the primary reasons

for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter Bellanti, Jason

Comment I-47-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:
 -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
 -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
 -The Terminal is centrally located within a two-mile radius of city-center
 -The Terminal also has secure parking facilities for up to 450 vehicles
 -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
 -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the prior response.

Commenter Bennett, Shirley B.

Comment I-48-1 we need a train station in the Finger Lakes Region to support tourism and increase the number of visitors to our wine country.

Response Thank you for your suggestion for the adding of a station along the Empire Corridor north of the Finger Lakes area. The High Speed Rail Empire Corridor Tier 1 EIS evaluates a range of corridor-level service improvements for the purpose of making decisions on corridor-level service, including service reliability, service frequency, and train speeds. The focus was on utilizing existing stations along the Empire Corridor. Trip time reductions for the Build Alternatives as discussed in the Tier 1 EIS were based on the trains operating non-stop between Syracuse and Rochester, without any intermediate stations in the Finger Lakes area. The inclusion of additional stations along the Empire Corridor could be part of future studies for expanding service.

Commenter Benzing, James

Comment I-49-1 I strongly support any substantial upgrades to the corridor.

Response Thank you for uour comments supporting the High Speed Rail Empire Corridor Program. Public comments have been considered in the by the FRA and NYSDOT of the Preferred Alternative.

Commenter Bersohn, Daniel

Comment I-50-1 High speed rail between Hudson and NYC and Buffalo? Yes, please! Please do it with electric trains so we can reduce carbon as the grid gets less carbon intense.

Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program. Your suggestion to use electric power for operating the trains would be achieved by Alternative 125, which was dismissed from further consideration in the Tier 1 FEIS. The Preferred Alternative, Alternative 90B, was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. A primary goal for the program is to increase patronage of rail passenger service, by attracting passengers from other modes of transportation (short distance air travel and automobiles), that have carbon footprints greater than rail passenger service. Achieving a diversion to rail and increases in rail passenger usage will reduce the carbon footprint of the other forms of transportation.
Commenter	Bersohn, Daniel
Comment I-50-2	Tilting trains might improve speeds on existing track without significant modification to existing track.
Response	Consideration of the types of locomotives and rolling stock will be part of the second evaluation (Tier 2) to further advance the design for that project, or group of projects, that will meet the goals of the program. Use of tilt trains on the route may require further study. The clearances of the tilt train wheel and axle assemblies may not meet the recommended allowances to operate on lines equipped with third rail that the Empire Corridor trains must use on both Metro North Railroad and in Pennsylvania Station, New York.
Commenter	Bick, Henry J.
Comment I-51-1	I believe the state could truly benefit from these upgrades to our rail system.
Response	Thank you for your comment on the High Speed Rail Empire Corridor Program. Comments from the public, including support for the High Speed Rail Empire Corridor Program, have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Bick, Michelle
Comment I-52-1	We felt that the state, and certainly local economies could benefit from these projects as presented.
Response	Comments from the public supporting of the High Speed Rail Empire Corridor Program have been considered in selecting the Preferred Alternative. Promoting economic vitality for the communities along the route is part of the purpose for the program, along with improving trip times, frequencies of service and passenger amenities.
Commenter	Birnbaum, Jesse
Comment I-53-1	I am strongly in favor of the High Speed Rail Empire Corridor Project.
Response	Thank you for your comments supporting the High Speed Rail Empire Corridor Program. Public comments have been considered in the selection by the FRA and NYSDOT of the Preferred Alternative.
Commenter	Bishop, Timothy
Comment I-54-1	A high speed passenger train from Buffalo to NYC is not needed, period.

Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 EIS.
Commenter	Bissaillon, Gary
Comment I-55-1	I am very interested in the proposed high speed rail corridor from Buffalo to Albany and to NYC. I am an occasional Amtrak rider and would love to see great improvements made in the high speed line with dedicated track for passenger traffic. I know I would increase the frequency of my trips with improved speed and on-time trains. I am in favor of the 125 mph option.
Response	Thank you for your comment supporting the 125 Alternative. Public comments have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. The Preferred Alternative, Alternative 90B, was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance.
Commenter	Blarr, Patricia
Comment I-56-1	I fully support a high speed rail from NY City to Buffalo. A few years ago my family took Amtrak from Depew to NYC. Trip was very beautiful, comfortable and ease of travel with baggage/luggage 99% better than air travel. Negative part of trip- Extremely frustrated with length of time train on rails. Travel by Amtrak took 10 hrs vs car-5-6 hrs. High speed rail would create same benefits in 21st century that Erie Canal produced in 19th century. Not enough space to list the numerous benefits. In Europe passenger trains are priority. That would be advantageous to America, as well. Time for fed govt to concentrate on passenger trains rather than air transp. Compared to air transp, passenger trains much more environmentally friendly and uses less fossil fuel.
Response	Comments from the public supporting the High Speed Rail Empire Corridor Program have been considered in selecting the Preferred Alternative. Major goals for the program include a reduction in trip times, along with improving the operating speeds of the passenger trains, frequencies of service, and passenger amenities.
Commenter	Blasdell, Serena
Comment I-57-1	I would love to see the central terminal in Buffalo as a stop for a high speed rail train.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.
Commenter	Bleier, Kevin
Comment I-58-1	I am a proponent for the following options in order of preference: 90B Alt 11 (because it has lower on-time performance) 90A

Response	Thank you for your support of Alternative 90B and your analysis of the alternatives. Public comments have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.
Commenter	Boatwright, Stephon J.
Comment I-59-1	With all this said, after intensely reviewing the options, I am in strong favor of alternative 110, or, despite its hefty price tag, option 125. This type of project would greatly alter my decision making process while looking for employment; upstate NY would become significantly more appealing.
Response	Your support of the the 110 and 125 Alternatives has been considered in the selection of Alternative 90B as the Preferred Alternative. In selecting Alternative 90B as the Preferred Alternative for the High Speed Rail Empire Corridor Program, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative). Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Boatwright, Stephon J.
Comment I-59-2	Lastly, I would like to express my opposition to any project that does not add more trains from the Western Corridor to New York City;
Response	Your comment has been considered in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B would double the frequency of service between Albany and Buffalo.
Commenter	Bogdan, Daniel, Consultant, United Consulting Network at High Speed Rail Systems, Consultant, United Consulting Network at High Speed Rail Systems
Comment I-60-1	High speed rail in New York should start with Alternative 125 as it offers the best solution to meeting the high speed rail performance objectives as listed in the your website (and brochure).
Response	Thank you for your comment supporting the 125 Alternative and the benefits from high speed rail. Public comments have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. The Preferred Alternative, Alternative 90B, was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance.
Commenter	Bogdan, Daniel, Consultant, United Consulting Network at High Speed Rail Systems, Consultant, United Consulting Network at High Speed Rail Systems
Comment I-60-2	The only modification that I would make with Alternative 125 would be to add a station in the Utica area (south of Utica)
Response	Your comments about preserving and offering intercity rail passenger service for the City of Utica have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was designed to help cut the distance between Albany and Syracuse by 14 miles, but one of the major drawbacks of this route is that it passes to the south of the stations on the current Empire Corridor in the Mohawk Valley

	between Syracuse and Albany. Therefore, the 125 express service would not serve Rome, Utica, Amsterdam, and Schenectady. As discussed in Chapter 3 of the Tier 1 FEIS, the Preferred Alternative would increase service to Utica.
Commenter	Bogdan, Daniel, Consultant, United Consulting Network at High Speed Rail Systems, Consultant, United Consulting Network at High Speed Rail Systems
Comment I-60-3	Has NYSDOT explored using the Barge Canal right of way and /or the abandoned West Shore Railroad right of way as part of the right of way for Alternative 125?
Response	Your comment on the Tier 1 DEIS has been considered in the selection of the Preferred Alternative (Alternative 90B), which follows portions of the canal system. As discussed in the prior responses, Alternative 125 was dismissed from further consideration. The Erie Canal (Barge Canal) may not be suitable in many areas for supporting the addition of a high speed railroad as it passes through park areas at many of the locks and uses part of the Mohawk River and other waterways. The West Shore Railroad right of way, in many locations, has been redeveloped for other uses and is still utilized by CSXT in the Rochester area. It does not offer access to Albany-Rensselaer Station or a direct connection to Manhattan.
Commenter	Bogdan, Daniel, Consultant, United Consulting Network at High Speed Rail Systems, Consultant, United Consulting Network at High Speed Rail Systems
Comment I-60-4	Another option for the other alternatives would be electrifying the existing right of way.
Response	Thank you for suggestion for electrifying the trackage along the route. The Tier 1 EIS discusses the types of energy used for trains in Section 4.20. One of the alternatives dismissed from further consideration in the Tier 1 FEIS, Alternative 125, would provide for electric trains between Albany and Buffalo. The Preferred Alternative, Alternative 90B, was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance.
Commenter	Bogdan, Daniel, Consultant, United Consulting Network at High Speed Rail Systems, Consultant, United Consulting Network at High Speed Rail Systems
Comment I-60-5	I'm a consultant at United Consulting Network at High Speed Rail Systems. I endorse alternative 125, with the caveat that there is a stop in the Utica area, New Hartford area. One or two or three or four trains can stop in this area, New Hartford, and Clinton. I don't think it would affect the schedule that much, perhaps all the stops in Utica or certain percentage, so an alternative 125 is really the start to High Speed Rail. It's got a dedicated Railway, it would eliminate a lot of confusion, perhaps with traffic on CSX, if there's a derailment on CSX which it is going to happen, it always does.
Response	Your comments about preserving and offering intercity rail passenger service for the City of Utica have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was designed to help cut the distance between Albany and Syracuse by 14 miles, but one of the major drawbacks of this route is that it passes to the south of the stations on the current Empire Corridor in the Mohawk Valley between Syracuse and Albany. Therefore, the 125 express service would not serve Rome, Utica, Amsterdam, and Schenectady. As discussed in Chapter 3 of the Tier 1 FEIS, the Preferred Alternative would increase service to Utica.
Commenter	Bogdan, Daniel, Consultant, United Consulting Network at High Speed Rail Systems, Consultant, United Consulting Network at High Speed Rail Systems
Comment I-60-6	I just have one more request that perhaps the comment period could be extended beyond the March 24th date. That would be, I think, greatly appreciated. I know it was out in

January, but now that you're having -- making these presentations, I think it's waking up a lot of people and they may want to make comments. I would suggest extending the deadlines for the written comments.

Response NYSDOT was able to extend the comment period, to April 30th, 2014, as other commenters shared your interest in lengthening the span of time to submit comments. Thank you for your comments on the High Speed Rail Empire Corridor Program.

Commenter **Boland, Bernice**

Comment Please use the central terminal in Buffalo N. Y. It will be the perfect speed rail destination.
I-61-1

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter **Boltz, Michael**

Comment This "high speed" rail is a terrible idea that nobody wants.
I-62-1

Response Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 EIS.

Commenter **Boomer-Jenks, Solon**

Comment I would like to voice my support in favor of bicycle and pedestrian access over the replacement for the Livingston Avenue railroad bridge. I believe having such access is important as there is currently only one other nonmotor vehicle river crossing within the City of Albany, with the nearest one outside the city several miles to the north. The only current crossing in Albany is inconvenient for pedestrians and bicycles as it requires climbing 60 feet and the path is quite narrow with bicyclists expected to walk their bikes the entire length.

Response Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge.

Commenter **Boulden, Kimberly A., Education and Employment Specialist, Hispanos Unidos de Buffalo, Education and Employment Specialist, Hispanos Unidos de Buffalo**

Comment I-64-1	With the expansion of the Buffalo Medical Campus and Cuomo's proposed "Buffalo Billion" coming to our city for job and urban development, it is crucial that our city be connected with other major centers. If we want to see Buffalo become a center for business, education, and growth, we need to improve the accessibility of our city.
Response	Thank you for your comment in support of the High Speed Rail Empire Corridor Program and the need to improve intercity rail passenger service in Buffalo and Western New York. Key goals of the program are to improving the operating speeds of the passenger trains, frequencies of service, and passenger amenities, which will all help to better serve the City of Buffalo. Your comment has been considered in the selection of Alternative 90B as the Preferred Alternative, which would double the frequency of service between Albany and Buffalo.
Commenter	Boulden, Kimberly A., Education and Employment Specialist, Hispanos Unidos de Buffalo, Education and Employment Specialist, Hispanos Unidos de Buffalo
Comment I-64-2	A proposed high speed train that tops out at speeds of 125 mph is "planning for the past." Like many abandoned projects in Buffalo, 125 mph train would have been a fantastic asset to our city twenty years ago. In 2014, the plan is dated and does not seem to be effectively utilizing the world's advancing technology and the region's vast resources in an efficient manner. If the plan can not offer a less than 6 hour train ride to New York City, I am afraid we will commit ourselves to project that will be outdated before it's ever completed.
Response	Your comments on the Tier 1 EIS have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Several alternatives were reviewed that would have introduced higher speed trains than Alternative 125, but it was determined that these alternatives would have a greater impact on the environment and higher costs. During the selection of the alternatives for review in the Tier 1 EIS, alternatives with speeds of 160 mph and 220 mph were considered, but were not advanced, in part because they would bypass all but four of the existing stations along Empire Corridor West.
Commenter	Boyer, Greg
Comment I-65-1	I am strongly in favor of the 125 option.
Response	Thank you for your comment supporting the 125 Alternative and the benefits from high speed rail. Public comments have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.
Commenter	Bradfuhrer, Edward
Comment I-66-1	A 6 hour train ride to from Buffalo to NYC would make people more likely to use the train over Airplanes since the time costs could be similar when parking, security and waiting on the tarmac are added into flying times. Any alternative with a ride of longer than approximately 6 hours would not have a similar effect. Once again, I support implementing Alternatives 110 or 125. I would prefer Alternative 125.
Response	Thank you for your support of the High Speed Rail Empire Corridor Program and 110 and 125 alternatives. Your comments on the Tier 1 EIS have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. We recognize your suggestion for higher speed trains, and in the early stages of the process several alternatives were reviewed that would have introduced higher speed trains than Alternative 125, but it was determined that these alternatives would have a greater impact on the environment and higher costs. The Preferred Alternative, Alternative 90B, was selected over Alternatives 110 and 125, based on its substantially lower costs, impacts, and

its performance. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter Brady, Joseph

Comment I-67-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

- The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
- The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
- The Terminal is centrally located within a two-mile radius of city-center
- The Terminal also has secure parking facilities for up to 450 vehicles
- The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
- The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter Braun, Patrick

Comment I-68-1 This opens an opportunity to establish right of ways for high speed connections, as well as renewable power generation and transmission. Electric based rail may appear to add cost to the infrastructure at first glance, but provides a sustainable and mutible alternative to diesel fuel.

Response Your comments on the use of electricity for train movements have been considered in the Tier 1 DEIS review process. The Tier 1 EIS discusses the types of energy used for trains in Section 4.20. One of the alternatives in the Tier 1 EIS, Alternative 125, provides for electric trains between Albany and Buffalo. The Preferred Alternative, Alternative 90B, was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance. A primary goal for the program is to increase patronage of rail passenger service, by attracting passengers from other modes of transportation (short distance air travel and automobiles), that have carbon footprints greater than rail passenger service. Achieving a diversion to rail and increases in rail passenger usage will reduce the carbon footprint of the other forms of transportation.

Commenter	Braun, Patrick
Comment I-68-2	The Buffalo Central Terminal is not only centrally located to provide multimodal transportation, it can serve as a cornerstone for renewable energy production to serve the high speed rail.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-67-1.
Commenter	Breisch, Keith C.
Comment I-69-1	<p>As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:</p> <ul style="list-style-type: none"> -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-67-1.
Commenter	Brodnick, John
Comment I-70-1	Alternative 125 is the only proposed plan that meets the definition and service advantages of high speed rail. Alternative 125 is the only plan that will attract enough travelers to change driving habits and provide viability to the high speed rail system.
Response	Thank you for your comment supporting the 125 Alternative and the benefits from high speed rail. In selecting Alternative 90B as the Preferred Alternative for the High Speed Rail Empire Corridor Program, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts. Alternative 90B would also shorten the trip from New York City to Niagara Falls by 1½ hours. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative). One of the drawbacks of Alternative 125 is that express service would not be directly provided to Niagara Falls, Rome, Utica, Amsterdam, and Schenectady. A substantial drawback of Alternative 125 is that it would take the longest time to construct and would be the costliest alternative.
Commenter	Brodnick, John

Comment I-70-2	Alternative 125 clearly meets all of the plan objectives, however the exhibit indicates that the regional portion of the plan does not provide service enhancements to several existing stations on the Empire Corridor including: Schenectady, Amsterdam, Utica, Rome, and Niagara Falls.
Response	Thank you for your analysis of the service levels and stations served for the Alternative 125. Alternative 125 was designed to reduce trip time between New York City and western New York, but one of the major drawbacks of this route is that it passes to the south of the stations on the current Empire Corridor in the Mohawk Valley between Syracuse and Albany. Therefore, 125 express service would not serve Rome, Utica, Amsterdam, and Schenectady. The Preferred Alternative, Alternative 90B, was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance. As discussed in Chapter 3 of the Tier 1 FEIS, the Preferred Alternative would increase service to Utica.
Commenter	Brodnick, John
Comment I-70-3	It must be noted, that the 95% on time performance for Alternatives 90B and Alternative 110 may be a bit optimistic considering projected freight train growth. The National Rail Plan states "Between 2010 and 2035, the transportation system will experience a 22 percent increase in the total amount of tonnage it moves. When looking forward to 2050, the increase is 35 percent" (United States, 2010). This report did not consider the boom in crude oil currently moving along CSX's Rail network.
Response	Thank you for your comment on on-time performance goals. The on-time performance values account for future growth in freight trains. Comments from the public, relating to the support of the High Speed Rail Empire Corridor Program, have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred alternative.
Commenter	Brodnick, John
Comment I-70-4	Exhibit 6.8 (Impact on freight train operations) indicates how each alternative will impact freight train velocity. Alternative 110 received a "strongly supports program goals" with an average freight train speed of 30.8 mph Buffalo NY to Selkirk Yard. Alternative 125 makes the same trip with an average speed of 30.3 mph and the plan received a "supports program goals". It is questionable whether a 2% or 0.05 mph difference in a freight trains speed over a 300 mile run could be differentiated to a point of separating their qualitative ran kings. Considering all of the program goals listed in the draft EIS the only plan that meets all goals is Alternative 125
Response	Thank you for your comment. Exhibit 6.8 facilitates a comparison of several factors, in addition to average speed, of the freight performance and differences of the alternatives. Alternative 125 would create a new passenger train-only corridor between Albany and Buffalo and would not include any additional improvements to the existing rail corridor beyond what is proposed with the Base Alternative. Therefore, its rating regarding freight impact is the same as the Base Alternative. The Preferred Alternative, Alternative 90B, was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance. Alternative 90B would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Brodnick, John
Comment I-70-5	-Alternative 125 is the one and only high speed rail plan that meets all the goals of the Draft EIS. -Alternative 125 is the only plan the meets the New York State Senates High Speed Rail Task force goals for creating an adequate high speed network. -Alternative 125 is the only plan that modestly lives up to the international standard of high speed rail, and the only plan that has a chance of successfully attracting ridership.

-Alternative 125 is the only plan that has an advantage over driving, saving travelers over one hour on a trip from Buffalo to New York City

Response Thank you for your comment supporting the 125 Alternative and the benefits from high speed rail. Public comment has been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B would involve less right-of-way and environmental impacts than Alternative 125 and would also shorten the trip from New York City to Niagara Falls by 1½ hours. Unlike the 125 express service, which would bypass existing stations at Schenectady, Amsterdam, Rome, Utica, and Buffalo-Depew, it will improve service to these existing stations. This alternative would result in the best overall on-time performance for Amtrak service in 2035 (since Alternative 125 would not improve regional service at stations bypassed) and would also double the frequency of service between Albany and Buffalo. Because it is situated largely within the existing right-of-way, it can be constructed in substantially less time than Alternative 125 and will begin to confer benefits within 2 to 5 years after start of construction.

Commenter Broton, Shawn

Comment NO to high speed rail, we cannot afford it!
I-71-1

Response Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the review process for the Tier 1 EIS.

Commenter Broton, Wendy

Comment I am against high speed rail because we cannot afford it.
I-72-1

Response Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the review process for the Tier 1 EIS.

Commenter Bruce, Parker, D.S. Ray Middle School, D.S. Ray Middle School

Comment If New York State were to install a high speed rail, it would be a beneficial economic achievement as a whole. Overall, if the state builds a high speed rail, it will positively affect my generation and other generations to come. As a bonus, it will bring a much need income to the state.
I-73-1

Response Your comments supporting the High Speed Rail Empire Corridor Program have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.

Commenter Buie, Caesar

Comment I would enjoy having the rail in-place.
I-74-1

Response Thank you for your comment on the High Speed Rail Empire Corridor Program. Public comments, including support for the High Speed Rail Empire Corridor Program, have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter Burke, N

Comment I would like to express my support for 110 alternative for NY HS
I-75-1

Response Thank you for your comment supporting the 110 Alternative and the benefits from high speed rail. Public comments have been considered by the FRA and NYSDOT in the selection

of Alternative 90B as the Preferred Alternative. Alternative 90B, the Preferred Alternative, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Because of the required property acquisitions, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance.

Commenter Burke, N

Comment I-75-2 Also, I hope that improvements to the stations will include better connectivity for pedestrians, bicyclists and transit users, to help make taking the train easy and accessible for everyone.
Please allow bicycles to be brought on the train as well. Bikes pair well with transit, and allow users to cover 'the last mile' between the train station and their final destination - no bike boxes or folding requirements, just a space for people to lock their bikes up on the train.

Response Thank you for your comments concerning the consideration of bicycles and pedestrians and accessibility of bicycles on trains operated in the High Speed Rail Empire Corridor evaluation process. Your comments have been considered by FRA and NYSDOT in the selection process for the Preferred Alternative. Stations for the Empire Corridor, in most cases, provide access to the public for public transit, automobiles, and pedestrians/cyclists. Currently, bicycles can be accommodated on the Empire Corridor, but require separate ticketing.

Commenter Burns, John

Comment I-76-1 I favor the Alternative 110 for the High Speed Rail Empire Corridor.
My second choice would be Alternative 90B

Response Thank you for your comment supporting the 110 Alternative and the benefits from high speed rail. Public comments have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B, the Preferred Alternative, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Because of the required property acquisitions, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance.

Commenter Burton, Steven

Comment I-77-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:
-The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
-The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
-The Terminal is centrally located within a two-mile radius of city-center
-The Terminal also has secure parking facilities for up to 450 vehicles
-The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development

-The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter **Bushey, Adam J.**

Comment I support spending the extra money and getting the faster trains that are consider as an option. Let's do it right the first time and spend the money.
I-78-1

Response Thank you for your comments in support of the High Speed Rail High Speed Rail Empire Corridor Program. All of the public's comment on the program have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 EIS.

Commenter **Bussanich, Marc**

Comment I would like to see train service from NYC to Niagara Falls running at 125 mph.
I-79-1

Response Thank you for your comment supporting the 125 Alternative. Public comments have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. In selecting Alternative 90B as the Preferred Alternative for the High Speed Rail Empire Corridor Program, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts. Alternative 90B would also shorten the trip from New York City to Niagara Falls by 1½ hours. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).

Commenter **Buterbaugh, Corinne, Buterbaugh Partners, Buterbaugh Partners**

Comment I strongly support the expansion of high-speed rail, especially in NY State, for the following reasons:
I-80-1

- National security – We rely too heavily on air travel for long distances. 9-11 demonstrated how vulnerable having only one long-distance travel option makes us.
- Train travel is safer than other forms of transportation.
- Train travel is less harmful to the environment than driving cars.
- Train travel is much more pleasant than air travel.
- Train travel is much more convenient than other forms of transportation, and you can work onboard.
- Train travel is less likely to be disrupted by bad weather than air or highway travel, which is especially important in central and western NY.

- The United States lags Europe, Japan, and other nations on new technologies in rail travel. This is harmful to our national security and our economy. It is also extremely embarrassing. Other countries are investing in infrastructure, and we continue to allow oil companies to dictate a transportation system that is outdated and inefficient.
- Critics say high-speed rail travel is prohibitively expensive; however, if you count the cost of highway construction and maintenance and subsidies to oil companies, travel by car costs much more than the 56 cents per mile the IRS allows. Most of the costs of car travel are hidden. Remember: Carbon emissions also cost, economically and in terms of quality of life!
- Young people prefer rail travel. They are rejecting car-centric suburbs for walkable neighborhood and cities that are connected by rail. This will lead to the further decline of Buffalo, Rochester, and Syracuse. Our dependence on cars is one of the factors driving young people away.
- Eventually, high-speed rail will become necessary (there is only so much air space, our population is growing, and people are more mobile). Why wait to start building high-speed rail until it is even more expensive?
- High-speed rail will mean more jobs and GROWTH for central and western NY.

Response Thank you for your comments supporting the important place and role intercity rail passenger service has in our communities. Comments from the public have been considered in the selection by the FRA and NYSDOT of the Preferred Alternative, which will improve reliability, travel times, and frequency of train service.

Commenter Buterbaugh, John

Comment I-81-1 I support the proposed high-speed rail project on the Empire Corridor. High-speed rail would not only create jobs in our state but it would also reduce our dependence on automobiles and enhance our technological standing worldwide.

Response Thank you for your comments supporting the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter Buttery, Lewis

Comment I-82-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

- The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
- The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
- The Terminal is centrally located within a two-mile radius of city-center
- The Terminal also has secure parking facilities for up to 450 vehicles
- The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
- The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-

Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter Byrd, Jason

Comment I-83-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

- The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
- The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
- The Terminal is centrally located within a two-mile radius of city-center
- The Terminal also has secure parking facilities for up to 450 vehicles
- The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
- The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the prior response.

Commenter Byrne, Michael

Comment I-84-1 I support the concept of high speed rail service for New York State. It could have a very positive impact on the economy and quality of life in upstate New York.

Response Thank you for your comment on the High Speed Rail Empire Corridor Program. Public comments, including support for the High Speed Rail Empire Corridor Program, have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter C., Alex

Comment I-85-1 My first concern has to do with the cost of this high speed rail.

Response Economic costs and benefits of each alternative for the High Speed Rail Empire Corridor Program have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter C., Alex

Comment I-85-2	A second concern of mine has to do with the time it will take to complete this project. Your website states it will take only 5 years to complete this project
Response	Schedules for construction and implementation of the different project components have not been determined at this time. The Service Development Plan provides scheduling of component projects, which will be further defined in Tier 2 assessments.
Commenter	C., Alex
Comment I-85-3	My last concern has to do with profitability. By what year would you expect to see a profit for this expensive project?
Response	Economic costs and benefits of each alternative for the High Speed Rail Empire Corridor Program have been considered by FRA and NYSDOT in the selection process for the Preferred Alternative. Chapters 5 and 6 of the Tier 1 EIS describes the costs and benefits of the program alternatives.
Commenter	Cadran, David, Vermont Rail Action Network Volunteer, Vermont Rail Action Network Volunteer
Comment I-86-1	I am writing as an interested “third-party” for the upgrade of this line. As a Vermont resident that relies on passenger rail for trips to NY and to bring travelers to our state, improvement of the Empire Corridor is crucial.
Response	Thank you for your comment supporting the benefits from high speed rail. Public comment has been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Cadran, David, Vermont Rail Action Network Volunteer, Vermont Rail Action Network Volunteer
Comment I-86-2	I am personally pushing for speeds of 110 mph which would help to create world class train service in the Empire Corridor to the benefit of all people in the region.
Response	Your comments supporting the 110 Alternative and the High Speed Rail Empire Corridor Program have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B would provide substantial travel time savings, but would constrain more of the additional trackage within the existing right-of-way than Alternative 110. Based on this, and resulting lower costs and impacts, Alternative 90B has been selected as the Preferred Alternative.
Commenter	Calandra, Nicholas M.
Comment I-87-1	I think this is a great idea. I would utilize the rail Buffalo to New York at least once a month. The Buffalo to Rochester and Buffalo to Syracuse a few times as well.
Response	Your comments supporting rail travel and the High Speed Rail Empire Corridor Program have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Carey, Matthew
Comment I-88-1	I would implore you to please include bike and pedestrian accommodations on the Livingston Avenue bridge across the Hudson.
Response	Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For

	more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge .
Commenter	Cargill, Todd
Comment I-89-1	I just recently became aware of the idea to use the old west shore railroad bed for this high speed rail project. As a resident of Swamp Road in the town of Bergen I am strongly opposed to this idea.
Response	Only Alternative 125 would use the former West Shore Railroad alignment in this area. The other alternatives, including Alternative 90B, would use the existing CSX right-of-way. Comments from the public, relating to the High Speed Rail Empire Corridor Program, have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.
Commenter	Carni, Michael, D.S. Ray Middle School, D.S. Ray Middle School
Comment I-90-1	I support the 110 alternative
Response	Thank you for your comment supporting the 110 Alternative and the benefits from high speed rail. Alternative 90B would provide substantial travel time savings, but would constrain more of the additional trackage within the existing right-of-way than Alternative 110. Based on this, and resulting lower costs and impacts, Alternative 90B has been selected as the Preferred Alternative.
Commenter	Carr, Deborah
Comment I-91-1	As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons: -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown

site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter Casasanta, James

Comment I-92-1 Personally, I am disheartened true high speed rail was not included in the potential options. By true high speed rail I mean maglev trains and bullet trains, not unlike those that are used in Europe and Asia that exceed 220 mph. This is the definition of true high speed rail.

Response Thank you for your comment on the High Speed Rail Empire Corridor Tier 1 DEIS. In reviewing the types of technologies to be used in providing the service, the focus was on using systems that would allow for connecting with the existing rail network, and development that was within possible funding levels and time constraints for construction. During the selection of the alternatives for review in the Tier 1 EIS, alternatives with speeds of 160 mph and 220 mph were considered but not advanced. It was determined that the range of options advanced would be those with trains operating at 90, 110 and 125 miles per hour. It was determined that operating trains at higher speeds would have greater impact on the environment, require more financial investment to construct and require more public resources to operate. Comments from the public, relating to the different service alternatives, have been considered by FRA and NYSDOT in the selection process for the Preferred Alternative.

Commenter Casasanta, James

Comment I-92-2 Given the options at hand, the only two that make sense are the 110 mph option and the 125 mph option.
But preferable, the better option is the 125 mph option.

Response Thank you for your comment supporting the 125 and 110 Alternatives and the benefits from high speed rail. Public comments have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative. In selecting Alternative 90B as the Preferred Alternative for the High Speed Rail Empire Corridor Program, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter Casatelli, Jeanne

Comment I-93-1 Empire Corridor involving the section between the village of Castleton and Staats Island Road in Schodack.
I am following up to respectfully ask what is the status of at-grade crossings in this stretch which were supposed to be consolidated, closed and replaced with a bridge or underpass? I was told that a federal mandate in 1980 blocked new at-grade crossings from being created which has kept our family's land on Campbell Island without land access since 1979. I am more than willing to work with you to address the situation in this area to meet safety and access concerns for all involved.

Response Thank you for your inquiry as to the status of adding new grade crossings to this particular route in the High Speed Rail Empire Corridor Program. Your comment will be shared with Amtrak, the operator of the railroad and NYSDOT, as they will be able to better address your comment, as to safety requirements for constructing new grade crossings.

Commenter Catel, Alice

Comment I-94-1	I liked both 90B and 90A, but I think the impacts on historical and wetlands maybe too high in 90B – so my vote and support for 90A.
Response	Thank you for your comment supporting the 90A Alternative and the benefits from high speed rail. The supporting improvements for the 90B Alternative are primarily within the existing right of way, requiring little additional land and should have minimal impacts on historical sites or wetlands. Public comments have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.
Commenter	Catlin, Lindsay
Comment I-95-1	Rochester has become quite the music scene and would be a lot easier for others to get here if there was high speed rail.
Response	Your comments supporting the High Speed Rail Empire Corridor Program have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.
Commenter	Cecconi, Nick
Comment I-96-1	I understand the importance of this Empire Corridor project and high speed rail; I do not understand how momentum for the Binghamton-NYC line dissipated after the initial feasibility study was concluded.
Response	Thank you for your comment on the HSR Empire Corridor Program. The program considers improvement alternatives for the Empire Corridor. The route mentioned (Pocono Corridor) is approximately 80 miles south of the Empire Corridor and does not service the same cities as the Empire Corridor.
Commenter	Cecconi, Nick
Comment I-96-2	connecting to Syracuse with buses is not popular and would not maximize ridership, even if high speed rail is successfully brought to the corridor.
Response	Comments from the public have been considered as part of the Tier 1 EIS review process. The Service Development Plan focuses on revenue service for the High Speed Rail Empire Corridor Program, and Tier 2 assessments can further consider transit connectivity at stations.
Commenter	Champion, David
Comment I-97-1	I think it's time that New York State takes the lead with this high speed rail project. To help offset the cost of the project and future maintenance expenses simply follow what other projects such as Arenas, theaters and even the TSA does at the airport and charge a small fee on every ticket. When it's paid off the fee can be used for upgrades and equipment maintenance of the line and stations. Let New York lead the way and not be a follower. I fully support this project and feel it's worth the expense.
Response	Thank you for your comment on the High Speed Rail Empire Corridor Program. Comments from the public, including support for the High Speed Rail Empire Corridor Program, have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Chelnov, Sandra
Comment I-98-1	I would highly recommend that ways be found to reduce the travel time between Buffalo and NYC be reduced to 4 hours.
Response	Your comments have been considered as part of the Tier 1 EIS review process. Several alternatives were reviewed that would have introduced higher speed trains than 125 mph,

	but it was determined that these alternatives would have a greater impact on the environment and higher costs.
Commenter	Chelnov, Sandra
Comment I-98-2	We are also concerned about climate change and the need to reduce green house gas emissions. While it is true that more construction requires more use of energy, the increased use of rail travel for both short and long distances and the decrease in car and air travel will play a significant role in reducing the state's greenhouse gas emissions.
Response	Your comments supporting the High Speed Rail Empire Corridor Program have been considered in the selection of the Preferred Alternative. With the Preferred Alternative, improving rail service along the Empire Corridor will encourage the public to shift from using automobiles, thereby helping to reduce carbon dioxide emissions and improving New York State's carbon footprint.
Commenter	Cherry, Elizabeth
Comment I-99-1	First I would like to say that the Empire Corridor is serving a wider population than you may realize. My fiancé and I travel by train whenever we travel. We live in Ithaca, so this requires a drive to Syracuse and the nearest train station.
Response	Thank you for your comments, relating to the support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. We agree with you about the importance of train travel regionally. Currently, the scope of the Tier 1 EIS focuses on the Empire Corridor from New York City to Niagara Falls, New York and the cities along the route. The Tier 2 assessments could examine other opportunities for indirectly (through transit or other connections) or directly serving additional communities along the route.
Commenter	Cherry, Elizabeth
Comment I-99-2	I am strongly in favor of the 125 option.
Response	Thank you for your comment supporting the 125 Alternative and the benefits from high speed rail. Public participation in the program is an important part of the selection process for the preferred alternative by the FRA and NYSDOT.
Commenter	Chiesi, Bill
Comment I-100-1	As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons: -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.
Commenter	Childs, Doreen
Comment I-101-1	As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons: -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the prior response.
Commenter	Cianchetti, John
Comment I-102-1	Niagara Falls needs help and this is it. Rail service can and will put the true JEWEL of New York and all of the East Coast on the map ! This is LONG overdue !
Response	Thank you for your comments supporting the High Speed Rail Empire Corridor Program and the need for improving rail passenger service on the route. Comments from the public have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Cipriani, Corindo
Comment I-103-1	High speed rail is a boondoggle, the cost exceeding enormously the benefits, now and in the very long run. Do NOT try to copy Europe, it's politically-correct, but this is a different land. AVOID spending on high speed rail ---- studies, commissions, etc.

Response	Comments from the public expressing their opinions of the High Speed Rail Empire Corridor Program have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 EIS.
Commenter	Clark, James
Comment I-104-1	I am convinced that this high speed rail service would serve this state as a whole better than any other transportation project conceived.
Response	Your comments supporting the High Speed Rail Empire Corridor Program have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Clark, Kenneth
Comment I-105-1	Utica should be included in any development plans for high speed rail in Upstate NY. This area is in need of support to continue the efforts to provide jobs and attract new development (such as the NanoTech Center being worked on at SUNYIT). Bypassing the city would undermine ongoing efforts and would send a negative message to prospective developers.
Response	Your comments about preserving and offering intercity rail passenger service for the City of Utica have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was designed to help cut the distance between Albany and Syracuse by 14 miles, but one of the major drawbacks of this route is that it passes to the south of the stations on the current Empire Corridor in the Mohawk Valley between Syracuse and Albany. Therefore, 125 express service would not serve Rome, Utica, Amsterdam, and Schenectady. As discussed in Chapter 3 of the Tier 1 FEIS, the Preferred Alternative would increase service to Utica.
Commenter	Clute, Courtney, D.S. Ray Middle School, D.S. Ray Middle School
Comment I-106-1	I highly disagree with the idea of the High Speed Rail. I think there are better things that we can spend money on. For Example, roads, and rail roads, and trains could use repairs. Bridges also need work done on them. They crack and become dangerous. Next, train tracks and trains; most train tracks today are in bad conditions.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Colangelo, Dominick
Comment I-107-1	NO HIGH SPEED RAIL SYSTEM
Response	Thank you for your opinion on the High Speed Rail Empire Corridor Program. Comments from the public, relating to the High Speed Rail Empire Corridor Program, have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Coleman, Stephen F., Licensed Psychologist, Licensed Psychologist
Comment I-108-1	I would certainly support additional resources to upgrade passenger train transportation through Upstate New York, particularly high-speed passenger train systems.
Response	Your comment in support of the High Speed Rail Empire Corridor Program has been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Collins, John
Comment I-109-1	In the alternative information, I would like to see a break out of the Niagara Falls to Albany times

Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. Simulated travel times can be found in Appendix D, Rail Network Operations Simulation, of the Tier 1 EIS. Travel times simulated for 2035 between Niagara Falls and Albany range between 3:37 to 6:26 depending upon the alternative. In the Tier 2 assessments, additional information can be developed to show trip time between segments of the route in refining schedules.
Commenter	Collins, John
Comment I-109-2	It would also be beneficial to show in your brochures, information, and DEIS the "project cost per rider" (\$ per million projected riders) of each option.
Response	Thank you for your comment. The information on cost per rider is shown on Exhibit 6-9 of the Tier 1 FEIS, as annualized operations and maintenance cost and subsidy per rider.
Commenter	Collins, John
Comment I-109-3	Many photos of current improvement projects show the use of timber rail ties. Are more modern materials being considered in the project costs? More modern materials like concrete ties may provide a longer service life, and hence be a better investment. Thus, material options should be considered that may raise construction costs but provide a better, long term investment.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. The photos used in the Tier 1 EIS are for illustrative purposes only. Construction materials used for any high speed rail improvement projects will be determined as the projects are developed and will be consistent with rail industry best practices and conform to Federal Railroad Administration regulations and requirements. In certain situations and environments, it should be recognized that wood crossties may be required to meet field conditions.
Commenter	Collins, Timothy
Comment I-110-1	What if this new rail system is a flop and trains go un-filled thus losing money or revenue to run as planned? Who will pick up that tab?
Response	Your comments concern ridership and revenue opportunities, which have been evaluated as part of the Tier 1 EIS analysis used by the FRA and NYSDOT to determine the Preferred Alternative. In addition, the Service Development Plan considers service strategies that promote increased ridership of intercity passenger trains along the Empire Corridor. Comments from the public, relating to the High Speed Rail Empire Corridor Program, have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Collins, Timothy
Comment I-110-2	What are the prices going to be? Is it going to be affordable or outrageously expensive? What about the safety of a train traveling more than 100 miles an hour through an automobile intersection? I'm not saying I wouldn't use it, I'm saying there will be millions of people that won't. Is/Would this project be financially secure enough to support itself if it doesn't receive the number of passengers it hopes for?
Response	Thank you for your comments discussing the safety of the operation of the high speed trains for both grade crossings and along the right of way. Ridership and revenue opportunities have been addressed in the analysis used by the FRA and NYSDOT in determining the Preferred Alternative for the project, as described above. Chapters 2 and 3 of the Tier 1 EIS address safety for the existing corridor and the program alternatives. Comments from the public have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Collins, William L.

Comment I-111-1	I favor Alternative 125 for the Empire Corridor. We must plan for the future transportation needs of NYS, not for the least expensive option. We need a serious competitor to air travel inside NYS.
Response	Thank you for your comments in support of Alternative 125 and the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. Alternative 90B was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Cominsky, Sidney, Law Offices of Sidney O. Cominsky, LLC, Law Offices of Sidney O. Cominsky, LLC
Comment I-112-1	Constructing a high speed rail system might be the only way to revive upstate New York. Public monies should and must be used for this project
Response	Thank you for your comment supporting the High Speed Rail Empire Corridor Program, which has been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B would double the frequency of service between Albany and Buffalo.
Commenter	Condo, Will
Comment I-113-1	My field is economic development, and upstate New York needs/requires efficient, reliable transportation options to regain economic growth. All options for “high” speed rail would be an improvemet – if we were plannig for the 19th or 20th century. Optio 125 is by far the best option offered – but – 220-300 is what should be the goal.
Response	<p>Thank you for your comments for on the need for trains to operate at higher speeds on the High Speed Rail Empire Corridor Program. Comments from the public, relating to Alternative 125, have been considered by the FRA and NYSDOT, in the selection of Alternative 90B as the Preferred Alternative.</p> <p>During the selection of the alternatives for review in the Tier 1 EIS, alternatives with speeds of 160 mph and 220 mph were considered, but were not advanced, in part because they would bypass all but four of the existing stations along Empire Corridor West. Moreover, it was also determined that operating trains at higher speeds would have greater impact on the environment, require more financial investment to construct and require more public resources to operate than the Preferred Alternative. The Preferred Alternative, Alternative 90B, was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.</p>
Commenter	Conklin, Richard
Comment I-114-1	With a High - Speed Train/Transit System, I would not only be able to afford it because it would be much cheaper than flying, as it cost's 1/4 of that price, but with the Central Terminal in Buffalo, I would be able to make connections there to continue to visit relatives living on the East Coast in places like New York City, Delaware, Connecticut and do so all withing the same amount I would spend for one trip! It would cost 2-3 times the current amount of airline tickets to make a flight to the same destinations and yet the cost for train travel would allow me to make trips more often and to farther destinations and still save spending money for the city's I visit.

Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. Improvement to the passenger rail facilities in the City of Buffalo area is an important goal of the High Speed Rail Empire Corridor Program. NYSDOT has implemented upgrades at the existing rail station at Buffalo-Depew to improve/rehabilitate the parking lot and enhance passenger access to comply with Americans with Disabilities Act requirements. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.
Commenter	Conner, Robert
Comment I-115-1	Please build this! Please build this rail, quick travel between Buffalo and New York City is exactly what I need
Response	Thank you for your comments supporting the High Speed Rail Empire Corridor Program. Comments from the public have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.
Commenter	Cook, Joyce
Comment I-116-1	I like the 125mph proposal, and wish that one could happen. But if it can't, then at least upgrade some of the worst tracks so the trains can travel faster than those cars on the Thruway!
Response	Thank you for your comment supporting the 125 Alternative and the benefits from high speed rail. Public comments have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative. In selecting Alternative 90B as the Preferred Alternative, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative). One of the drawbacks of Alternative 125 is that express service would not be directly provided to Niagara Falls, Rome, Utica, Amsterdam, and Schenectady.
Commenter	Cooley, Stacie
Comment I-117-1	would love to have high speed rail.
Response	Thank you for your comment on the High Speed Rail Empire Corridor Program. Public comments, including support for the High Speed Rail Empire Corridor Program, have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Kuersteiner, Donna and Cooper, John
Comment I-118-1	We were appalled to hear that a new highspeed might bypass Utica & Rome. Utica has fine refurbished station and it is well used. It seems wasteful to build a new rail line at huge

expense south of this area to gain a slight increase in speed (125 mph as opposed to 95 - 110 mph to go through Utica and Rome) , please continue the line through these two cities.

Response Your comments about preserving and offering intercity rail passenger service for the City of Utica have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was designed to help cut the distance between Albany and Syracuse by 14 miles, but one of the major drawbacks of this route is that it passes to the south of the stations on the current Empire Corridor in the Mohawk Valley between Syracuse and Albany. Therefore, 125 express service would not serve Rome, Utica, Amsterdam and Schenectady. The Preferred Alternative, Alternative 90B, was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance. As discussed in Chapter 3 of the Tier 1 FEIS, the Preferred Alternative would increase service to Utica.

Commenter Cope, Robert D.

Comment I-119-1 I fully support the High Speed Rail initiative. This project can greatly cut into our dependence on fossil fuel and help the environment.

Response Your comments supporting the High Speed Rail Empire Corridor Program have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter Cording, Carl

Comment I-120-1 This is a very important socioeconomic project—just what the Capital District needs!

Response Thank you for your comment supporting the High Speed Rail Empire Corridor Program, which has been considered by FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter Cornwell, Kirk

Comment I-121-1 This is to make clear my unequivocal support for whatever is necessary to make the Albany-Rensselaer RR bridge usable for bicycle and pedestrian traffic.

Response Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge.

Commenter Cox, Jane

Comment I-122-1 After attending the public hearing in Buffalo, I agree that a dedicated rail line for high speed trains is the answer. I prefer Alt #110, which would not require acquisition of separate corridor land.

Response Thank you for your comments supporting Alternative 110, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternatives 90B and 110 would restore large sections of third and fourth track, but the Preferred Alternative (Alternative 90B) would constrain more of the additional trackage to the existing right-of-way, substantially reducing costs and impacts.

Commenter Cox, Jane

Comment I-122-2 Please do not consider anything less than Alternative #110. Doing nothing should not be an option.

Response	Your comment in support of 110 Alternative has been considered in the selection of Alternative 90B as the Preferred Alternative. Because of the required property acquisitions, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance. For these reasons and those outlined above, this alternative was dismissed from further consideration.
Commenter	Cox, Robert W.
Comment I-123-1	Alternative #110 is the minimum plan option, in my opinion.
Response	Thank you for your comment in support of 110 Alternative. Public comments, relating to Alternative 110, have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative, for the reasons outlined above. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will reduce travel times between New York City and Niagara Falls by 1 ½ hours in 2035, compared to the Base Alternative. Alternative 90B, the Preferred Alternative, would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Craig, Susan A.
Comment I-124-1	I am a strong supporter of Alternative 12
Response	Thank you for your comment supporting the 125 Alternative and the benefits from high speed rail. Public comments have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).
Commenter	Craig, Susan A.
Comment I-124-2	I am a frequent, very frequent traveler up and down the Empire Corridor now. Five times out of six on my way home from Amsterdam to NYC the train is delayed by several hours.
Response	Thank you for your comments supporting the Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. The Preferred Alternative, Alternative 90B, would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Craine, Allison
Comment I-125-1	I think it would be a great idea.
Response	Your comments and support of the High Speed Rail Empire Corridor Program have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Crandall, Brian
Comment I-126-1	While I certainly appreciate the infrastructure investment brought by this project and its various proposals, I have concerns regarding the impact on historic resources through land acquisition in the grander proposals; our historic resources are one of our greatest assets, and the detrimental impacts of transportation projects like the Thruway are still apparent in cities like Syracuse. I also have concerns with some of the socioeconomical impacts

described, because some things can be more “black-and-white” (population projections), while others are “grey,” such as people in the NYC metro moving further north up the Hudson Valley.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program. Comments from the public have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. In selecting Alternative 90B as the Preferred Alternative, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts.

Commenter Crittenden, Gregory

Comment I-127-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal’s use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:
 -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
 -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
 -The Terminal is centrally located within a two-mile radius of city-center
 -The Terminal also has secure parking facilities for up to 450 vehicles
 -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
 -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation’s Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter Cruce, Joanne

Comment I-128-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal’s use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:
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 -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York

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 -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degree programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the prior response.

Commenter Crysler, Robert E.

Comment I-129-1 I am in favor of the continued consideration of this infrastructure project however the emphasis should shift to Return On Investment (ROI) versus Cost. I would also see a Life Cycle Analysis as well as some historical ROI analysis on past infrastructure projects such as the Erie Canal, The Panama Canal, Rural Electrification and particularly other passenger rail projects.

Response Thank you for your comments. Economic costs and benefits of each alternative for the High Speed Rail Empire Corridor Program have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Chapters 5 and 6 of the Tier 1 FEIS describe the costs and benefits of the program alternatives.

Commenter Crysler, Robert E.

Comment I-129-2 I am strongly in favor of high speed rail through the Empire Corridor of New York State.

Response Thank you for your comment on the High Speed Rail Empire Corridor Program. Comments from the public, including support for the High Speed Rail Empire Corridor Program, have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter Crysler, Robert E.

Comment I-129-3 Personally, I would also like to see a consideration of short line in upstate New York in addition to high speed rail.

Response Thank you for your comments. The purpose of the High Speed Rail Empire Corridor Program is to introduce higher passenger train speeds on the Empire Corridor and to improve reliability, travel times, levels of train service and passenger amenities. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. In the future, consideration could be given to other supporting rail projects on the route between New York City and Niagara Falls.

Commenter Curcio, Brad

Comment I-130-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:
 -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.

-The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York

-The Terminal is centrally located within a two-mile radius of city-center

-The Terminal also has secure parking facilities for up to 450 vehicles

-The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development

-The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter **Curtis, Robert**

Comment I-131-1 It is with excitement that I read of possible high speed rail for upstate NY. This may improve employment by making it more possible for people to travel more efficiently around the state.

Response Thank you for your comments supporting the High Speed Rail Empire Corridor Program and the need for improving rail passenger service on the route. Comments from the public have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As noted in the Tier 1 FEIS, Alternative 90B would double the service frequency along Empire Corridor West.

Commenter **Czuprynski, Larry**

Comment I-132-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

-The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.

-The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York

-The Terminal is centrally located within a two-mile radius of city-center

-The Terminal also has secure parking facilities for up to 450 vehicles

-The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development

-The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-130-1.

Commenter Danieu, Eamon

Comment I-133-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

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Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-130-1.

Commenter D'Anthony, Dante

Comment I-134-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

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- The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
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- The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-130-1.
Commenter	Dasey, Theresa M.
Comment I-135-1	As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons: -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-130-1.
Commenter	(No Last Name), David
Comment I-136-1	no to high speed rail.
Response	Thank you for your comment on the High Speed Rail Empire Corridor Program. Comments from the public have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 EIS.
Commenter	Davis, Cindy
Comment I-137-1	Attached, you will find a letter sent by Marilyn Rodgers, Executive Director/CEO of the Central Terminal Restoration Corporation, to the NYS DOT outlining our position, as well as highlighting a recent resolution adopted by the City of Buffalo Common Council regarding their position favoring the Central Terminal's reuse as part of this project. As always, thanks for supporting the Buffalo Central Terminal!
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee,

tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter Davis, Jim

Comment I-138-1 I sincerely believe that the economic benefits to this state will exceed anyones expectations. The potential for tourism in Upstate NY is largely an untapped resource.

Response Your comments supporting the High Speed Rail Empire Corridor Program have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As noted in the Tier 1 FEIS, Alternative 90B would double the service frequency along Empire Corridor West.

Commenter Davis, Jim

Comment I-138-2 Is the NY Thruway right-of-way off limits for any kind of rail service, including light rail?

Response Comments from the public have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Regarding your question on the potential use of the Thruway right-of-way, Alternative 125 follows the New York State Thruway between Albany and Schenectady. In other areas, the grades, curvature of the Thruway, and availability of additional property for the high speed rail right of way in some locations, did not support following the highway.

Commenter Davis, Jim

Comment I-138-3 All things being equal, the “125” alternative is “way too much too soon.” Alternatives 90A, 90B, and 110 are all reasonable and will produce multiple benefits.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program. Comments from the public have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 would create a dedicated, 2-track passenger right-of-way over much of the Empire Corridor and was dismissed due to higher costs and impacts. Alternative 90A would not provide the same level of transportation benefits as it would not add the same capacity as Alternatives 90B and 110 (which each provide more than 300 miles of additional trackage). Alternatives 90B and 110 would restore large sections of third and fourth track, but Alternative 90B would constrain more of the additional trackage to the existing right-of-way, substantially reducing costs and impacts.

Commenter Davis, Jim

Comment I-138-4 The Empire Corridor plan is great. I wonder if the plan could be expanded sometime to include a) Albany to Montreal, and B) Albany to Boston?

Response Thank you for your comments on the High Speed Rail Empire Corridor Program. Currently, the goals and objectives of the program are the improvement of intercity rail passenger service along the Empire Corridor from New York City to Niagara Falls. Amtrak service to Boston is provided via the Lake Shore Limited Line. Service to Boston is currently provided by Amtrak over the CSXT's Boston Line and the Massachusetts Bay Transportation Authority's Worcester Line. Improvements on this line could be considered in the future, but requires partnering with Commonwealth of Massachusetts and these host railroads. Amtrak service to Montreal is currently provided via the Adirondack Line. New York State has had a long partnership with Amtrak to provide service to Montreal dating back to 1974,

	and utilizes the tracks of the Canadian Pacific for this route. Over the years, New York State DOT has improved the tracks, including recently new double track in the area of Ballston Spa, to upgrade passenger trains operations on this route.
Commenter	Davis, Steve
Comment I-139-1	Having traveled Amtrak as recently as 4-26-14 my experiences would ten to favor more Amtrak dedicated rail would speed up service much more cheaply and cost effective.
Response	Thank you for your comments on the high speed rail program. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight traffic and will reduce travel times between New York City and Niagara Falls by 1 ½ hours in 2035, compared to the Base Alternative.
Commenter	Davis, Steve
Comment I-139-2	As I use the Utica station exclusively I would also not favor it being dropped from the schedule and having no stops between Schenectady and Syracuse which would mean the longest non-stop routing in the entire system. Alt 125.
Response	Your comments about preserving and offering intercity rail passenger service for the City of Utica have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was designed to help cut the distance between Albany and Syracuse by 14 miles, but one of the major drawbacks of this route is that it passes to the south of the stations on the current Empire Corridor in the Mohawk Valley between Syracuse and Albany. Therefore, 125 express service would not serve Rome, Utica, Amsterdam and Schenectady. As discussed in Chapter 3 of the Tier 1 FEIS, the Preferred Alternative would increase service to Utica.
Commenter	Dearing, Andrew
Comment I-140-1	As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons: -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee,

tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter Decker, Leigh

Comment I-141-1 I believe New York should leave the idea of a "high speed rail system" alone.

Response Thank you for your comments. Comments from the public, relating to the High Speed Rail Empire Corridor Program, have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter Decker, Leigh

Comment I-141-2 A lesson for New York is that high speed rail systems only work if there are ample transportation options at each destination. This requires European style metro systems and dense urban cores, neither of which is the majority of America's strong suit.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program. Individual projects or groups of projects for the Preferred Alternative will be advanced according to the Service Development Plan to Tier 2 environmental evaluations and design development. Suggestions and comments for improving connectivity between different modes of transportation with rail passenger service have been considered in the development of the Service Development Plan. The Empire Corridor connects the largest cities in the state, from New York City, Yonkers, to Albany, Syracuse, Rochester, and Buffalo. For station projects, opportunities for multimodal connectivity can be pursued with the local municipality and transit provider.

Commenter Degenfelder, Ron

Comment I-142-1 If you are considering a location in Buffalo area for high speed rail/transportation, the Central Terminal has been waiting years for you.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-140-1.

Commenter Dekdebrun, Kylie

Comment I-143-1 It would be a wonderful opportunity to redevelop Buffalo's Central Terminal with a new era of train travel.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-140-1.

Commenter Delmonte, Andrew

Comment I-144-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

-The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.

-The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York

-The Terminal is centrally located within a two-mile radius of city-center

-The Terminal also has secure parking facilities for up to 450 vehicles

-The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development

-The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-140-1.

Commenter DeLude, Danielle

Comment I-145-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

-The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.

-The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York

-The Terminal is centrally located within a two-mile radius of city-center

-The Terminal also has secure parking facilities for up to 450 vehicles

-The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development

-The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-140-1.

Commenter Dembrosky, Stan

Comment I-146-1 I think someone should look at electrifying the New York to Buffalo line.

Response Thank you for your comment. Chapter 3 of the Tier 1 EIS discusses the types of power used in each of the alternatives considered. Alternative 125, which was dismissed from further consideration in the Tier 1 FEIS, would have used electric power. The Preferred Alternative, Alternative 90B, was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance.

Commenter	De Muth, Roger
Comment I-147-1	Having a high speed rail line between upstate and NY city would stimulate the economy of upstate dramatically Yes I approve! Do it!
Response	Thank you for comments on the benefits of the High Speed Rail Empire Corridor Program. Economic costs and benefits of each alternative have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. Chapters 5 and 6 of the Tier 1 EIS describe the costs and benefits of the program alternatives.
Commenter	DeNora, Nick
Comment I-148-1	Buffalo needs all the help it can get. When Buffalo had trains just look at the Central Terminal it was a huge hub. Therefore bring the Trains back please
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.
Commenter	Desjardins, Zachary
Comment I-149-1	My favorite option is the 125mph option but without a new right of way and without electricity.
Response	Thank you for your comment supporting Alternative 125, which has been considered by FRA and NYSDOT in the selection of the Preferred Alternative. The Preferred Alternative, Alternative 90B, was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance. Alternative 125 would create an exclusive new right-of-way, which would involve potential impacts on 2,000 to 3,000 acres of land.
Commenter	Desjardins, Zachary
Comment I-149-2	Who made the decision to capitulate to CSX, the owner of the right way, and study only options outside of its right way for 125mph? Why wasn't a third track with the existing Empire corridor studied?
Response	Thank you for your comment concerning alternative alignments in the High Speed Rail Empire Corridor Program. Chapter 3 of the Tier 1 EIS discussed alternative selection and reviews for each of the alternatives considered. Portions of the existing corridor geometry can support 125 mph maximum authorized speed, however, just like the 110 and 90 mph Alternatives, there are portions of the corridor that could not be realigned to support 125 mph, so trains would have to slow down and speed up at each civil speed restriction. That is, the trip time (or average speed) for the new corridor 125 Alternative will be better than

	the trip time (or average speed) for an existing-corridor 125 Alternative. The Preferred Alternative, Alternative 90B, will provide over 280 miles of third track, largely located within the existing railroad right-of-way.
Commenter	Desjardins, Zachary
Comment I-149-3	Why didn't the commission study an option for 125mph diesel trains instead of only 125mph electric trains?
Response	Thank you for your question. The Tier 1 EIS discusses the types of energy used for trains in Chapter 3 and Section 4.20. For Alternative 125, a dual mode diesel-electric locomotive was considered. Selection of the Preferred Alternative, Alternative 90B, for the High Speed Rail Empire Corridor Program, by the FRA and NYSDOT, considered locomotive propulsion and the types of energy for train movements. Equipment selections and specifications will be further reviewed and evaluated as the program moves forward in the Tier 2 assessments.
Commenter	Desjardins, Zachary
Comment I-149-4	why weren't tilting train options studied?
Response	Thank you for your comment on the High Speed Rail Empire Corridor Program. The selection of Alternative 90B as the Preferred Alternative, by the FRA and NYSDOT, considered railroad technology and systems as discussed in the Tier 1 EIS. Electrified dynamic tilt trains were evaluated in Chapter 3 as part of the 160 mph and 220 mph Very High Speed (VHS) alternatives, which were dismissed from further consideration.
Commenter	Desjardins, Zachary
Comment I-149-5	I think NYS should put its money into building a 125mph diesel train system using as much of the existing infrastructure and right of way as possible.
Response	Thank you for your comment on the alternative selection for the High Speed Rail Empire Corridor Program. Portions of the existing corridor geometry can support 125 mph maximum authorized speed, however, just like the 110 and 90 mph Alternatives, there are portions of the corridor that could not be realigned to support 125 mph, so trains would have to slow down and speed up at each civil speed restriction. Chapter 3 of the Tier 1 EIS discusses alternative selection and evaluations of the alternatives considered. The Preferred Alternative, Alternative 90B, was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance. Alternative 90B would provide substantial travel time savings, but would constrain more of the additional trackage within the existing right-of-way than Alternatives 110 and 125. Selection of Alternative 90B as the Preferred Alternative, by the FRA and NYSDOT, considered locomotive propulsion and types of energy for train movements (see Section 4.20 of Tier 1 FEIS). Equipment selections and specifications will be further reviewed and evaluated as the program moves forward in the Tier 2 assessments.
Commenter	Desjardins, Zachary
Comment I-149-6	Buy Super Voyager tilting trains or EMD F125 locomotives to allow for 125mph speeds
Response	Thank you for your comments, relating to the types of equipment to be operated as part of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Equipment selections and specifications will be further reviewed in Tier 2 assessments. Any rolling stock selected for operation will need to comply with Federal Railroad Administration

	regulations, and capable of mixing in operation with other trains and locomotives on the North American railroad network.
Commenter	Desjardins, Zachary
Comment I-149-7	Upgrade the Hudson Line between Albany-New York City for 125mph speeds in most sections
Response	Thank you for offering your support of the Alternative 125. The FRA and NYSDOT have considered operating speeds and trip times in the selection of Alternative 90B as the Preferred Alternative for the High Speed Rail Empire Corridor Program. Operations on the Hudson Line are constrained by shared operation with Metro-North Hudson Line commuter rail trains, and Alternative 90A improvements (that are included in the Preferred Alternative) includes upgrades to the line to increase operating speeds.
Commenter	Desjardins, Zachary
Comment I-149-8	Upgrade the Empire Line between Schenectady and Depew for 125mph speeds in some straight sections and bottleneck sections such as Rochester to Depew or Syracuse to Utica
Response	Thank you for your comment on the High Speed Rail Empire Corridor Program. Alternative 90B would involve less right-of-way and environmental impacts than Alternative 125 and would also shorten the trip from New York City to Niagara Falls by 1½ hours. This alternative would result in the best overall on-time performance for Amtrak service in 2035 (since Alternative 125 would not improve regional service at stations bypassed) and would also double the frequency of service between Albany and Buffalo. Because it is situated largely within the existing right-of-way, it can be constructed in substantially less time than Alternative 125 and will begin to confer benefits within 2 to 5 years after start of construction. Unlike the 125 express service, which would bypass existing stations at Schenectady, Amsterdam, Rome, Utica, and Buffalo-Depew, it will improve service to these existing stations.
Commenter	DeStefano, Linda A.
Comment I-150-1	What is missing is an evaluation of a new reality, namely, that there are now a large number of railroad tankers which carry crude oil from the Bakken Shale in N. Dakota through upstate New York. The crude is more volatile than other crude, and more than one explosion has already occurred. The worst was in July, 2013 in which much of a small village in Quebec was destroyed, and 47 people were killed. Sen. Charles Schumer has called these tankers "bomb trains". New standards for tankers would reduce the danger, but these tankers are not now being used. The trains go through downtown Syracuse. If there were an explosion, how could people be evacuated quickly? The trains also travel along Onondaga Lake. Much has been done to clean up the lake and to build amenities. The trains go right over a trail. An amphitheater is proposed for the lake shore. Even without an explosion, a spill could contaminate the lake and would make the amenities unusable until adequate cleanup was completed. Thus, I request that the EIS include an analysis of how high speed rail impacts safety, environmental and social aspects of these tankers.
Response	Thank you for your comments. Minimizing interference with freight rail operations is one of the six performance objectives of the High Speed Rail Empire Corridor Program. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. These improvements that will reduce congestion, delays and interference between passenger and freight trains will improve safety. Chapters 2, 3, and 4 of the High Speed Rail Empire Corridor Tier 1 EIS address alternatives, and safety and environmental benefits and concerns.

Commenter	Dettman, Perry
Comment I-151-1	Any train has very limited use for the entire state, a lot of money spent for the few people who want to use it. It will be like Rochester's Fast Ferry, a lot of money spent with only a very small percentage of people in the area using it.
Response	Thank you for your comments. Economic costs and benefits of each alternative for the High Speed Rail Empire Corridor Program, have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Dettman, Perry
Comment I-151-2	A Fast Train could be a whole lot of law suits waiting to happen, as it races threw rail crossings, possibly crashing into motor vehicles in its path. As well as possible derailments, not a far fetched opinion,as I'm a retired trucker, I can predict this will happen.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail. Chapters 2 and 3 address safety for the existing corridor and the program alternatives. Comments from the public, discussing the safety of the operation of the high speed trains for both grade crossings and along the right of way, have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Dewitt, John
Comment I-152-1	I support the Alternative 110 option.
Response	Thank you for your comment supporting the 110 Alternative, which has been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternatives 90B and 110 would restore large sections of third and fourth track, but the Preferred Alternative (Alternative 90B) would constrain more of the additional trackage to the existing right-of-way, substantially reducing costs and impacts.
Commenter	Dillingham, Justin
Comment I-153-1	As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons: -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not

included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter Dobucki, Randy

Comment I-154-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

- The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
- The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
- The Terminal is centrally located within a two-mile radius of city-center
- The Terminal also has secure parking facilities for up to 450 vehicles
- The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
- The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degree programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-153-1.

Commenter Dolhy, Paul

Comment I-155-1 Explain to me how adding 1 track is going to work?

Response Thank you for your comment. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail. The Preferred Alternative, Alternative 90B, will provide over 280 miles of third track, largely located within the existing railroad right-of-way. The FRA and NYSDOT considered the operation of passenger and freight trains along the Empire Corridor in each of the alternatives outlined in the Tier 1 EIS in the selection of the Preferred Alternative.

Commenter Dolhy, Paul

Comment I-155-2 You need two tracks not one, two tracks for csx freight & two tracks for Amtrak pass.

Response	Thank you for your comment on the High Speed Rail Empire Corridor Program. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail. The Tier 1 EIS reviews the operation of multiple tracks along the Empire Corridor, including developing specific track diagrams and modeling/simulation of rail operations, to identify the necessary infrastructure projects that will improve travel times and the reliability of service. Alternative 90B would restore large sections of third and fourth track.
Commenter	Dominguez, Javier
Comment I-156-1	I would like to see NYSDOT reach out to college campuses and get more feedback from the college students.
Response	Thank you for your comment on the High Speed Rail Empire Corridor Program. Recognizing the importance of public awareness for the project, six public hearings were held across the state between March 4, 2014 and March 12, 2014 in Albany, Syracuse, Buffalo, Rochester, Utica, and Poughkeepsie. The Albany public hearing was held at the College of Nanoscale Science and Engineering. Three additional informational meetings were held including one at Niagara University. In addition the project has a website: https://www.dot.ny.gov/empire-corridor , that provides the option of downloading the Tier 1 DEIS and other supporting documents.
Commenter	Dominguez, Javier
Comment I-156-2	I feel that the student population would be in favor of the 125 plan.
Response	Thank you for your comment. In selecting Alternative 90B as the Preferred Alternative for the High Speed Rail Empire Corridor Program, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts. Alternative 90B would also shorten the trip from New York City to Niagara Falls by 1½ hours. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative). A substantial drawback of Alternative 125 is that it would take the longest time to construct and would be the costliest alternative.
Commenter	Donnelly, Jr., Peter
Comment I-157-1	90A seems the safest bet as it addresses the need for more East-West trains and improves infrastructure.
Response	Thank you for your comment, relating to Alternative 90A, which has been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. The Alternative 90A improvements are incorporated into the Preferred Alternative.
Commenter	Donnelly, Jr., Peter
Comment I-157-2	I do not feel that 125 justifies its costs.
Response	Thank you for your comments, relating to Alternative 125, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. In selecting Alternative 90B as the Preferred Alternative for the High Speed Rail Empire Corridor Program, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts.
Commenter	Donnelly, Jr., Peter

Comment I-157-3	If this plan were to be adopted, I would strongly recommend that there be an increase in local train travel between Syracuse and Albany
Response	Thank you for your comments on improvements to the service, which have been considered in the development of the Service Development Plan and the selection of Alternative 90B as the Preferred Alternative. This alternative would result in the best overall on-time performance for Amtrak service in 2035 and would also double the frequency of service between Albany and Buffalo. Projected level of service and train travel times between Syracuse and Albany for each alternative can be found in Appendix D, Rail Network Operations Simulation.
Commenter	Donnelly, Jr., Peter
Comment I-157-4	I strongly support 90A because it fulfills the most basic needs (time efficiency and more options).
Response	Thank you for your comment supporting Alternative 90A, which has been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. The Alternative 90A improvements are incorporated into the Preferred Alternative.
Commenter	Donnelly, Jr., Peter
Comment I-157-5	I feel that 110 is a better long term plan provided that the building needs of 90B are not urgent, and provided that there will not be major resistance of the building of new rails.
Response	Thank you for your comment supporting the 110 Alternative. Alternative 90B would provide substantial travel time savings, but would constrain more of the additional trackage within the existing right-of-way than Alternative 110. Based on this, and resulting lower costs and impacts, Alternative 90B has been selected as the Preferred Alternative.
Commenter	Donnelly, Steve
Comment I-158-1	Let's develop a multi-phase master plan consisting of: (1) Holding CSX accountable for poor dispatching and host railroad responsible delays (2) improve the border crossing process to/from Canada (3) implement incremental improvements of the rail system we currently have (4) higher speed rail.
Response	Thank you for your comments, which have been considered in the development of the Service Development Plan and Tier 1 FEIS. In selecting Alternative 90B as the Preferred Alternative for the High Speed Rail Empire Corridor Program, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts. Alternative 90B would shorten the trip from New York City to Niagara Falls by 1½ hours, which would also benefit Maple Leaf service continuing on into Canada. The focus for the program is on improvements along the Empire Corridor between Niagara Falls and New York City. This alternative would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. The SDP provides a schedule for phased implementation of the individual projects comprising the program.
Commenter	Dougherty, Catherine
Comment I-159-1	High speed rail should use existing tracks and stop in every city along the route including Utica/Rome.

Response	Thank you for your comments about preserving and offering intercity rail passenger service for the City of Utica, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. In selecting Alternative 90B as the Preferred Alternative for the High Speed Rail Empire Corridor Program, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts. As discussed in Chapter 3 of the Tier 1 EIS, the Preferred Alternative will double the frequency of service to Rome and Utica.
Commenter	Dougherty, Catherine
Comment I-159-2	The Utica/Rome corridor region has Nanotechnology and Drone manufacturing companies relocating to the region. The nearest proposed high speed rail stop is in Syracuse and that is unacceptable and too far to drive back to Utica. This project should be used to renovate existing tracks and routes.
Response	Thank you for your comments about preserving and offering intercity rail passenger service for the City of Utica, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. The Preferred Alternative will double the frequency of service to Utica and the stations in the Mohawk Valley.
Commenter	Drajem, Lynn
Comment I-160-1	Yes please make the Central Terminal a stop on this project.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.
Commenter	Drake, Paula
Comment I-161-1	Let's get going! This is a desperately needed services
Response	Thank you for your support for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection the Preferred Alternative.
Commenter	Du Bois, Patricia
Comment I-162-1	I find it appalling to see such HIGH SPEED trains screaming along PRIMITIVE ground rail systems Why aren't you constructing MONORAILS high above ground like 30 feet above ground so you can scream across at 2-300 mph from one city to the next. Why don't you take a look at Walt Disney World's monorail system, take a look at Regal Theatre's opening commercial that begins the show.

Response Thank you for your comments on the High Speed Rail Empire Corridor Tier 1 EIS. In reviewing the types of technologies to be used in providing the service, the focus was on using systems that would allow for connecting with the existing rail network, and development that was within possible funding levels and time constraints for construction. During the selection of the alternatives for review in the Tier 1 EIS, alternatives with speeds of 160 mph and 220 mph were considered but not advanced. It was determined that the range of options advanced would be those with trains operating at 90, 110 and 125 miles per hour. Alternative 125 would involve construction of a viaduct on structure in places, but it would involve considerable costs and impacts (to 2,000 to 3,000 acres of land). It was determined that operating trains at higher speeds would have greater impact on the environment, require more financial investment to construct and require more public resources to operate. Comments from the public, relating to the different service alternatives, have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.

Commenter Dudek, Jessica

Comment I-163-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:
 -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
 -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
 -The Terminal is centrally located within a two-mile radius of city-center
 -The Terminal also has secure parking facilities for up to 450 vehicles
 -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
 -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-160-1.

Commenter Duszynski, Peter

Comment I-164-1 I am concerned that the proposed high speed rail corridor would negatively affect business operations.

Response Thank you for reviewing the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. The goals of the program include using the improved intercity rail passenger service to promote economic activity along the route and increase the attractiveness of the region for business. In the Tier 1 EIS, Chapters 3 and 4 discuss the positive impacts of the program. More specifically, Section 4.3, Regional Population and Employment, and Business Districts, discusses how the program will create employment opportunities and support the labor markets in the regions served by the improved rail service.

Commenter Duszynski, Peter

Comment I-164-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations. Compromised or limited service on the current freight network may force many companies to alter business operations and begin shipping more products by truck – increasing cost, increasing our environmental footprint and increasing traffic on New York roadways.
Response	Thank you for your comments. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. The importance of preserving and improving freight rail traffic to the economy of New York State has been an important factor in the selection of the Preferred Alternative.
Commenter	Dworzanski, Ray
Comment I-165-1	As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons: -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.
Commenter	Dymond, Jayne
Comment I-166-1	As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

-The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.

-The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York

-The Terminal is centrally located within a two-mile radius of city-center

-The Terminal also has secure parking facilities for up to 450 vehicles

-The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development

-The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the prior response.

Commenter Eames, Frederick

Comment I-167-1 As upgrading the Livingston Avenue bridge must be a part of this plan, PLEASE consider that a bicycle-pedestrian walkway on the bridge must be a part of this upgrade. It's quite obvious. It would provide a much safer and friendlier crossing than the current Dunn Memorial bridge, as described by Casey Seiler in the Times-Union on April 27. Aside from its practical value for pedestrian traffic, it can be an attraction in itself, because of its proximity to the Corning Preserve waterfront area (though not as spectacular as the Poughkeepsie Walkway, it can have a similar stimulating effect on local recreation.)

Response Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge.

Commenter Elton, Wallace

Comment I-168-1 I write to express my general support for the Empire Corridor Project to bring high-speed rail to the NYC-Albany-Buffalo corridor.

Response Thank you for your comment, relating to the support of the High Speed Rail Empire Corridor Program, which has been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. The Preferred Alternative will double the frequency of service between Albany and Buffalo.

Commenter Elton, Wallace

Comment I-168-2 There is, however, another use of this (the Empire West portion) historic transportation corridor that the EIS should acknowledge and assess impacts on: the Erie Canal way Trail.

Response Thank you for your comments on the Tier 1 EIS. Existing conditions related to the Erie Canalway Trail are presented in Appendix G, Environmental Inventory and Impact Assessment and Sections 4.6 (waterways), 4.8 (navigable waters), 4.15 (historic resources),

	and 4.16 (parklands/recreation areas). These sections of the Tier 1 FEIS address the potential impacts of the Preferred Alternative on the canals and canal trails.
Commenter	Elton, Wallace
Comment I-168-3	In the larger picture, the Empire Corridor Project should support and facilitate bicycle and pedestrian opportunities throughout its route by including linkages and facilities wherever feasible.
Response	Thank you for your continued interest in the High Speed Rail Empire Corridor Program. A number of station improvement projects have been completed as separate independent projects along the Empire Corridor, including reconstruction at the Buffalo-Exchange Street Station. Currently, bicycles can be accommodated on the Empire Corridor, but require separate ticketing. Comments from the public, relating to the accessibility of bicycles and pedestrians, have been considered in the design of station facilities and other facilities constructed as separate projects along the route and in the Tier 1 assessments for Empire Corridor. Individual projects, or groups of projects, will undergo a second evaluation (Tier 2) to further advance design for that project, or group of projects including looking at options for pedestrian/bicycle accommodations.
Commenter	Elton, Wallace
Comment I-168-4	In one specific example, the new or refurbished Livingston Avenue Bridge over the Hudson River in Albany must include provision for bicycles and pedestrians.
Response	Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge .
Commenter	Englert, Timothy
Comment I-169-1	As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons: -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at

the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter Erdmann, Tyler

Comment Buffalo needs to be considered for the high speed rail line!
I-170-1

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the stations in Buffalo, New York. Improvement to the passenger rail facilities in the City of Buffalo area is an important goal of the High Speed Rail Empire Corridor Program. NYSDOT has implemented upgrades at the existing rail station at Buffalo-Depew to improve/rehabilitate the parking lot and enhance passenger access to comply with Americans with Disabilities Act requirements. The High Speed Rail Empire Corridor Tier 1 EIS evaluates a range of improvements for the purpose of making decisions on corridor-level service. The focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the prior response.

Commenter Ericson, Del

Comment Fast train was favorite spot for suicides when we lived near the Boston to Washington, DC. Make sure to include safety fence at high risk areas in your cost estimates.
I-171-1

Response Thank you for your comments about safety on this high speed rail line. All feasible safety measure including those cited by the commenter will be considered, if appropriate, as the design stages progress and will be analyzed in the Tier 2 analysis. Chapters 2 and 3 address safety for the existing corridor and the program alternatives. The Tier 1 FEIS accounts for several types of fencing and warning systems, including installation of perimeter fencing on both sides of the right-of-way on portions of the right-of-way to prevent trespassing. The Tier 1 FEIS addresses fencing and other safety features for the Preferred Alternative in Section 3.3.3, under the "Safety" section.

Commenter Eson, Jud

Comment The planned rebuilding of Albany's Livingston Avenue Railroad Bridge presents a one-time, unique opportunity to create a pedestrian / bicycle walkway between both sides of the Hudson River.
I-172-1

Response Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge.

Commenter Evans, J. Reid

Comment I-173-1	I highly support the high speed rail project for the Empire Corridor
Response	Thank you for your comments expressing support for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Everett, Norma
Comment I-174-1	I feel that Buffalo Central Terminal reuse should be included in the proposed NYS high speed rail plans
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-169-1.
Commenter	Eyington, David
Comment I-175-1	As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons: -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-169-1.
Commenter	F., Audrey
Comment I-176-1	I think that the establishment of the high speed rail between Albany and New York will help a lot of students
Response	Thank you for your support of the High Speed Rail Empire Corridor Program, which has been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Falbo, A.
Comment I-177-1	Localized Buffalo rapid transit lines should be below ground in neighborhoods. This will protect the integrity of the neighborhoods and communities. Be smart - below ground in local Amherst areas. Above ground is great for state span distances Buf to Albany. SO UNDERGROUND TRANSIT LINE IN AMHERST!

Response	Thank you for your comments. The High Speed Rail Empire Corridor Program focuses on improving intercity rail passenger service between New York City and Niagara Falls. Improvements to the light rail or rapid transit system in the Buffalo area is not part of the scope of this program.
Commenter	Falbo, Antone
Comment I-178-1	We want underground local rapid transit lines in Amherst please.
Response	Thank you for your comments. The High Speed Rail Empire Corridor Program focuses on improving intercity rail passenger service between New York City and Niagara Falls. Improvements to the light rail or rapid transit system in the Buffalo area is not part of the scope of this program.
Commenter	Fandl, Richard
Comment I-179-1	As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons: -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degree programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.
Commenter	(No Last Name), Fanying
Comment I-180-1	The most important aspects of travel is consistent on time performance (does not have to be the fastest) just consistent so I can properly budget my time effectively. High speed is nice but predictable travel time is most important,

Response	Thank you for your comments on the High Speed Rail Empire Corridor Program regarding on time performance, which have been considered in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B, the Preferred Alternative, would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Farina, Nicholas J.
Comment I-181-1	I read a story in our local paper that the proposed high speed line if constructed at 125mph would bypass Utica. How idiotic an idea is that!
Response	Your comments about preserving intercity rail passenger service for the City of Utica have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125, a high-speed railroad on a new alignment, was designed to help cut the distance between Albany and Syracuse by 14 miles. One of the major drawbacks of this route is that it passes to the south of the stations on the current Empire Corridor in the Mohawk Valley between Syracuse and Albany. Therefore, 125 express service would not serve Rome, Utica, Amsterdam and Schenectady. As discussed in Chapter 3 of the Tier 1 FEIS, the Preferred Alternative would increase service to Utica.
Commenter	Farrell, Shirley
Comment I-182-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Thank you for reviewing the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. Chapters 3 and 4 discuss the positive impacts of the program. More specifically, Section 4.3, Regional Population and Employment, and Business Districts, discusses how the program will create employment opportunities and support the labor markets in the regions served by the improved rail service.
Commenter	Farrell, Shirley
Comment I-182-2	I strongly encourage the state to include High Speed Passenger rail ONLY as it would run apart from the freight rail network.
Response	Thank you for your comment, which has been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. The importance of segregating passenger rail from freight and preserving and improving both passenger and freight rail traffic to the economy of New York State has been an important consideration. As outlined above, the additional trackage provided by the Preferred Alternative, Alternative 90B, would improve both passenger and freight rail capacity and operations.
Commenter	Farrell, Shirley
Comment I-182-3	I urge the state to maintain current freight service and the capacity for growth by selecting the base alternative.
Response	Thank you for your interest in the High Speed Rail Empire Corridor Program. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight traffic and will reduce travel times between New York City and Niagara Falls by 1½ hours in 2035, compared to the Base Alternative. Alternative 90B would also involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Farrell, Don

Comment I-183-1	this is a huge waste of money like the bridge to NOWHERE. Amtrak is a waste too the money will be better spent on bridge repair/replacement !!
Response	Thank you for your comments, relating to the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Farrington, Alexandra
Comment I-184-1	<p>As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:</p> <ul style="list-style-type: none"> -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.
Commenter	Fassler, Cary
Comment I-185-1	<p>My sister and her husband, both profs at Notre Dame would visit us more frequently in Oswego county if train service improved to Syracuse. My wife and I would go to NYC more frequently if train service was acceptable from Syracuse or Utica.</p> <p>The U.S. should not allow our infrastructure to blunder into third world status and allow the loud government haters to win this war.</p>
Response	Thank you for your comments, supporting the program, which have been considered by the FRA and NYSDOT in selecting Alternative 90B as the Preferred Alternative. Alternative 90B would shorten the trip from New York City to Niagara Falls by 1½ hours and would also double the frequency of service to destinations along Empire Corridor West, including Syracuse and Utica.

Commenter	Faulds, Colin and Fratesi, Victor
Comment I-186-1	We are very supportive of Alternative 110 for the Empire Corridor renovations and new construction.
Response	Thank you for your comments supporting the 110 Alternative, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternatives 90B and 110 would restore large sections of third and fourth track, but the Preferred Alternative (Alternative 90B) would constrain more of the additional trackage to the existing right-of-way, substantially reducing costs and impacts.
Commenter	Faust, Catherine
Comment I-187-1	Please include Buffalo's historic NY Central as an intermodal train station for the NYS High Speed Rail Empire Corridor.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.
Commenter	Fava, Peter
Comment I-188-1	No poster of Utica when we inquired. We were told 'Utica already has a beautiful station'. This is true. Does that mean Utica will not receive any other upgrade?
Response	Thank you for your comment regarding the passenger station in Utica. As described in Section 3.3.3 of the Tier 1 FEIS, the Preferred Alternative, Alternatives 90B includes making operational and platform improvements to Utica Station. The specific details of these improvements would be determined in a project level evaluation conducted at a later date as part of the Tier 2 assessments.
Commenter	Fava, Peter
Comment I-188-2	NY State does not have the wide open space of some other areas. Do we need to spend billions of dollars to go to 110 or 125 miles per hr? how often would the trains be able to sustain these speeds?
Response	Thank you for your comments on the costs of Alternative 110 and 125 for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. In selecting Alternative 90B, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts. Chapters 5 and 6 of the Tier 1 EIS describe the costs and benefits of the program alternatives.
Commenter	Fava, Peter

Comment I-188-3	Any plan that takes Utica off the route or stops is out of the question. Having to get off a "High Speed" train and transfer to a "regional" train is a disservice. Where is the time saving and efficiency for our area residents?
Response	Thank you for your comments about preserving and offering intercity rail passenger service for the City of Utica, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. The Preferred Alternative will double the frequency of service to Utica, unlike Alternative 125. Since Alternative 125 would bypass Utica, express service to this station would not be provided.
Commenter	Felder, Vincent R.
Comment I-189-1	I am in favor of Alternative 125.
Response	Thank you for your comments, relating to Alternative 125, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. In selecting Alternative 90B as the Preferred Alternative for the High Speed Rail Empire Corridor Program, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).
Commenter	Felicetti, Tony
Comment I-190-1	We need high-speed rail in upstate New York. It will be at economic boom to this area but the trains must run on time!
Response	Thank you for offering your support, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B will double the frequency of service to Empire Corridor West and would result in the best overall on-time performance for Amtrak service in 2035.
Commenter	Fennie, Bruce, Bruce Fennie & Associates, Bruce Fennie & Associates
Comment I-191-1	1. RE the Base Alternative of 1.6 million passengers, is that today or in 2035? 2. If 2035 what is the latest year you have that info on?
Response	Thank you for your comment on the High Speed Rail Empire Corridor Program. The ridership estimate in the Tier 1 EIS is for future conditions in 2035, which would reflect the growth in the next 20 years. Base year (2009) ridership estimates are approximately 1.3 million and can be found in Chapter 2 and Appendix B.
Commenter	Fennie, Bruce, Bruce Fennie & Associates, Bruce Fennie & Associates
Comment I-191-2	3. How does the 1.6 Million breakdown between: a) NYC-Albany? b) Albany -Buf c) Albany- ROC d) Albany- Syracuse e) NYC-Buf f) NYC-ROC g) NYC-Syracuse 4. If 1.6 million is the 2035 Number how does the latest year you have data for breakdown as described in a-g above?
Response	Thank you for your interest in the High Speed Rail Empire Corridor Program.

For the service between these locations, the 1.6 million riders breaks down as follows; NYC-Albany (570,326), Albany-Buff (12,760), Albany-ROC (12,210), Albany-Syracuse (10,708), NYC-Buff (29,632), NYC-ROC (42,492), and NYC-Syracuse (55,214).

For the base year (2009) data, the 1.3 million riders breaks down as follows; NYC-Albany (542,702), Albany-Buff (10,146), Albany-ROC (10,386), Albany-Syracuse (8,822), NYC-Buff (68,182), NYC-ROC (72,596), NYC-Syracuse (60,734).

Detailed ridership and revenue data is maintained by NYSDOT and Amtrak for the service provided on the Empire Corridor. Current figures for these destinations can be obtained by contacting Amtrak.

Commenter Fennie, Bruce, Bruce Fennie & Associates, Bruce Fennie & Associates

Comment I-191-3 5. Av price of tickets a-g in 2035 and latest year?

Response Thank you. Base year (2009) ticket prices range from \$18 between Utica and Syracuse to \$58 between NYC and Buffalo, as presented in Appendix B of the Tier 1 EIS. The current cost of fares on Amtrak can be found on their website (<http://www.amtrak.com/home>). Ticket prices for the year 2035 are not known at this time, and would be subject to operating costs and assistance from NYSDOT and the federal government at that time.

Commenter Fennie, Bruce, Bruce Fennie & Associates, Bruce Fennie & Associates

Comment I-191-4 1. How much federal and State money has been spent on this project and over how many years?

Response Thank you for your continued interest in the High Speed Rail Empire Corridor Program. In April of 2010, NYSDOT received a \$1 million grant from FRA to conduct analyses of potential Empire Corridor improvements, including preparation of a Service Development Plan, Tiered EIS, and other necessary studies. In addition, Federal Highway Administration (FHWA) contributed \$1.8 million to the Tier 1 EIS preparation, and New York State provided matching funds in the amount of \$3.5 million (New York State rail funds).

Commenter Fennie, Bruce, Bruce Fennie & Associates, Bruce Fennie & Associates

Comment I-191-5 2. The subsidy per passenger (Exhibit ES-4) does not include any imputed interest for the Capital outlays although the taxpayers are paying interest of the Federal debt. Why has interest on the debt / Capital not been included in the Subsidy?

Response Thank you for your comments. There is no interest paid on direct federal capital grants for transportation projects. Moreover, the omission of this cost element, even if it were a true program cost, is consistent for all alternatives such that comparisons of economic performance across alternatives remain valid. Interest on the federal debt is not allocated across all federal grants but rather is a separate payment out of the treasury shown as a budget line item exclusive of federal programs funded with the remaining federal budget. It would therefore be inappropriate to make assumptions as to the appropriate index to assign to each capital dollar expended. For these reasons, the subsidy is calculated only on the gap between annual operating costs and ticket revenues collected by Amtrak.

Commenter Fernandez, Joseph, Licensed Real Estate Broker, CJF Realty, Licensed Real Estate Broker, CJF Realty

Comment I-192-1 If we are to make a massive investment in a new transportation system, then the return should by rights be equally massive. Compared to the alternatives, it should ideally be:

- Safer
- Faster
- Lower cost

- More convenient
- Immune to weather
- Sustainably self-powering
- Resistant to Earthquakes
- Not disruptive to those along the route

Response Thank you for your comment on the High Speed Rail Empire Corridor Program. Economic costs and benefits of each alternative for the program have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight traffic and will reduce travel times between New York City and Niagara Falls by 1 ½ hours in 2035, compared to the Base Alternative. Alternative 90B would double the service frequency along Empire Corridor West and would result in the best overall on-time performance for Amtrak service in 2035 of all of the alternatives considered. It would increase ridership by 1 million over the Base Alternative. The net annual operational benefits for the Preferred Alternative would be roughly equivalent to eliminating the emissions associated with the energy and electricity consumption of 2,500 to 4,200 average U.S. single family homes every year. Chapters 5 and 6 of the Tier 1 EIS describe the costs and benefits of the program alternatives.

Commenter **Fernandez, Joseph, Licensed Real Estate Broker, CJF Realty, Licensed Real Estate Broker, CJF Realty**

Comment I-192-2 The Hyperloop (or something similar) is, in my opinion, the right solution for the specific case of high traffic city pairs that are less than about 1500 km or 900 miles apart. Around that inflection point, I suspect that supersonic air travel ends up being faster and cheaper. With a high enough altitude and the right geometry, the sonic boom noise on the ground would be no louder than current airliners, so that isn't a showstopper. Also, a quiet supersonic plane immediately solves every long distance city pair without the need for a vast new worldwide infrastructure.

Response Thank you for your interest in the High Speed Rail Empire Corridor Program. In selecting the Preferred Alternative, the FRA and NYSDOT focused on technology in the Tier 1 EIS that is compatible with, and will allow connections with, other parts of the national rail network.

Commenter **Fernandez, Joseph, Licensed Real Estate Broker, CJF Realty, Licensed Real Estate Broker, CJF Realty**

Comment I-192-3 Short of figuring out real teleportation, which would of course be awesome (someone please do this), the only option for super fast travel is to build a tube over or under the ground that contains a special environment. This is where things get tricky.

Response Thank you for your comments on the High Speed Rail Empire Corridor Tier 1 EIS. In reviewing the types of technologies to be used in providing the service, the focus was on using systems that would allow for connecting with the existing rail network, and development that was within possible funding levels and time constraints for construction. During the selection of the alternatives for review in the Tier 1 EIS, alternatives with speeds of 160 mph and 220 mph were considered but not advanced. It was determined that the range of options advanced would be those with trains operating at 90, 110 and 125 miles per hour. Alternative 125 would involve construction of a viaduct on structure in places, but it would involve considerable costs and impacts (to 2,000 to 3,000 acres of land). It was determined that operating trains at higher speeds would have greater impact on the environment, require more financial investment to construct and require more public resources to operate. Comments from the public, relating to the different service alternatives, have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.

Commenter	Fernandez, Joseph, Licensed Real Estate Broker, CJF Realty, Licensed Real Estate Broker, CJF Realty
Comment I-192-4	I believe that New York State should be the first state to consider other modes of transportation not just rail. One mode proposed is Evacuated Tube Transport Technologies (www.et3.com). Elon Musk of Tesla Motors, SpaceX, etc., has proposed a similar system called Hyperloop. Proponents of both systems are hoping to obtain enough signatures by July, 2014 in the State of California to persuade California's State Legislature to pass a bill allowing for these systems to be built in addition to rail.
Response	Thank you for your comment on the High Speed Rail Empire Corridor Program. As described in the prior responses, in selecting the Preferred Alternative, the FRA and NYSDOT focused on technology in the Tier 1 EIS that is compatible with, and will allow connections with, other parts of the national rail network. Economic costs and benefits of each program alternative have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. Chapters 5 and 6 of the Tier 1 EIS describe the costs and benefits of the program alternatives.
Commenter	Field, Susan
Comment I-193-1	Much needed! Would bring some jobs too!
Response	Thank you for your comments, relating to the support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Filler, Samuel
Comment I-194-1	Based on the current political climate and the state of the budget, I would suggest going after option 90B and pursuing the express track build out as another phase.
Response	Thank you for your comments in support of Alternative 90B, which have been considered by FRA and NYSDOT in the selection of 90B as the Preferred Alternative. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail, and the Service Development Plan presents the phased implementation of individual projects. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).
Commenter	Fisher, Jean
Comment I-195-1	Would love a high speed rail. Pick Alternative 90B
Response	Thank you for your comment on the High Speed Rail Empire Corridor Program, expressing support for Alternative 90B, which has been selected by FRA and NYSDOT as the Preferred Alternative.
Commenter	Fishlock, Frances
Comment I-196-1	I think we should go for the fastest train we can have in Central NY. If we do something less than the best, it will have to be upgraded at a much greater cost in the future.
Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B will reduce travel times between New York City and

	Niagara Falls by 1 ½ hours in 2035, compared to the Base Alternative. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Fiutak, Paul
Comment I-197-1	Syracuse's future as a continuing crossroads of transportation for the NE IS AT STAKE.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As noted in the Tier 1 FEIS, Alternative 90B would double the service frequency along Empire Corridor West that includes Syracuse.
Commenter	Fiutak, Paul
Comment I-197-2	Consider future benefits for the limited weather delays benefitting travelers
Response	Thank you for your comments, relating to the support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Flynn, L.R.
Comment I-198-1	High speed rail is not a priority but repairing the State Highway system is.
Response	Thank you for your comments. The purpose of the High Speed Rail Empire Corridor Program is to introduce higher passenger train speeds on the Empire Corridor and to improve reliability, travel times, levels of train service and passenger amenities between New York City and Niagara Falls. Consideration of the needs for the interstate highway system was not included in the scope of the program. However, the proposed rail improvements are anticipated to result in a diversion of trips from the highway system, resulting in operational benefits. This annual net benefit (compared to the Base Alternative) would be roughly equivalent to eliminating the emissions associated with the energy and electricity consumption of 2,500 to 4,200 average U.S. single family homes every year.
Commenter	Foley, John
Comment I-199-1	I strongly support the inclusion of a bike /pedestrian path in any project to Improve the rail line at Livingston avenue.
Response	Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge .
Commenter	Folts, James D.
Comment I-200-1	The draft EIS indicates that only the existing station stops between Albany and Niagara Falls would be served by higher-speed trains. I hope that a final plan will propose stations in places like Batavia and Newark.

Response	Thank you for your comments. The Tier 1 EIS is a corridor level evaluation that considers use of the existing stations only. Alignments and rights of way for each of the different alternatives do not include new stations. Additional stations could be addressed in future studies.
Commenter	Folts, James D.
Comment I-200-2	At the Albany public hearing some speakers advocated for a pedestrian walkway across the Livingston Avenue railroad bridge in Albany. I oppose it.
Response	Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge .
Commenter	Forbes, Melissa
Comment I-201-1	I think High Speed Rail would be great for NY.
Response	Thank you for your comment supporting the High Speed Rail Empire Corridor Program, which has been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Forbes, Melissa
Comment I-201-2	Go for it all. We need to get our rail system back in this century enough of band aid fixes.
Response	Thank you for your comments supporting the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Fordock, Arleen
Comment I-202-1	I do not want high-speed train; want \$ to go for education of children in NY State.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 EIS.
Commenter	Fordock, Arleen
Comment I-202-2	Ques: Will the 90 people --attending Wed meeting at DBT Stadium---verify that they or their employees DO currently travel via present train system to NY City? Will they say they avoid the current train at all costs, & travel by AIR instead?
Response	Thank you for your comment on ridership patterns on the High Speed Rail Empire Corridor. A detailed assessment of market demand and projected ridership was completed for each of the alternatives discussed in the Tier 1 EIS. Ridership and revenue performance were important considerations in selecting the Preferred Alternative.
Commenter	Fordock, Arleen

Comment I-202-3	What agency has done a headcount of travelers leaving Syr & unloading themselves at NY City? Will actual survey, via internet or a paper process, accomplish a proper headcount? OR will Gov Cuomo just do a "executive order" and spend the \$ as he/his office sees fit?
Response	Thank you for your questions regarding ridership patterns on the High Speed Rail Empire Corridor. Amtrak monitors the ridership on all trains along the Empire Corridor at each of the stations. Syracuse was the sixth busiest station on the route, behind Penn Station, Albany-Rensselaer, Hudson, Rhinecliff, and Rochester, with over 131,000 riders using the station during fiscal year 2019. Ridership and revenue performance were important considerations in selecting the Preferred Alternative.
Commenter	Fordock, Arleen
Comment I-202-4	what is cost per person IF 90 people per week DO ride the high-speed train AND return to Syr?
Response	Thank you for your question on the cost of ridership on the High Speed Rail Empire Corridor. The current cost of fares on Amtrak can be found on their website (http://www.amtrak.com/home). A detailed assessment of market demand and projected ridership was completed for each of the alternatives discussed in the Tier 1 EIS. The subsidy for the Preferred Alternative (Alternative 90B) would be \$13 per rider, which would be lower than both Alternative 125's subsidy per rider of \$14 and the Base Alternative's subsidy per rider of \$17 per rider. Ridership and revenue performance were important considerations in selecting the Preferred Alternative.
Commenter	Fordock, Arleen
Comment I-202-5	What "high-speed train "contract will be divulged TO the public, reflecting where the funds DO come from?
Response	Thank you for your question regarding the funding for the High Speed Rail Empire Corridor Program. In April of 2010, NYSDOT received a \$1 million grant from FRA to conduct analyses of potential Empire Corridor improvements, including preparation of a Service Development Plan, Tiered EIS, and other necessary studies. In addition, Federal Highway Administration (FHWA) contributed \$1.8 million to the Tier 1 EIS preparation, and New York State provided matching funds in the amount of \$3.5 million (New York State rail funds). Future funding for the program has not been determined at this time. The program costs, schedule, and implementation were considered by the FRA and NYSDOT in selecting the Preferred Alternative, and the implementation of service initiatives were investigated in the development of the Service Development Plan.
Commenter	Fordock, Arleen
Comment I-202-6	Need a public referendum on this item? As per Charter of NY State? The general fund would or would not be providing \$ for the development of this train? What %? If yes, then it would detract from the education of the children in NY State; i.e., less would be funded for schools and universities(including lowering of funds for BOCES/for SUNY/for other educational items).
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered as part of the review process for the Tier 1 EIS. The program is supported by both the Federal Railroad Administration and the New York State Department of Transportation and would be subject to the funding requirements of both the federal and state governments.
Commenter	Fordock, Arleen
Comment I-202-7	TO have a high-speed train that carries merchandise/tractor trailers/cattle/food/any merchandise as well as people, is or is not the purpose??

Response	Thank you for your comment on the HSR Empire Corridor Program. The purpose of program is to introduce higher passenger train speeds on the Empire Corridor and to improve reliability, travel times, levels of train service and passenger amenities. The service being considered is focused on trains that carry passengers and associated luggage. The alternatives discussed in the Tier 1 EIS do not consider trains that mix freight and passengers on the same train. An evaluation of how each alternative impacts both freight and passenger rail operations has been considered by the FRA and NYSDOT as part of the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail.
Commenter	Fordock, Arleen
Comment I-202-8	TEST runs, during beginning development, would number over 30 to ensure safety checks were documented? Engine fires possible? Batteries, lithium or other style? Backup personnel on train at all times for safety of passengers, from beginning to end? ALL rails weather-checked during periods of time, & "spot-checks" as required by some NYS "safety board"?
Response	Thank you for your comments on the importance of safety in the implementation of the High Speed Rail Empire Corridor Program. As part of the implementation of any HSR project, a comprehensive safety program would be followed, along with the familiarization of staff and employees with the new features of the service.
Commenter	Fordock, Arleen
Comment I-202-9	IS train wholly owned by investors, by corporation, by??
Response	Thank you for your question on ownership of passenger trains in New York State. Currently, the intercity passenger service along the Empire Corridor is a partnership between the New York State Department of Transportation and Amtrak, which operates the trains and owns many of the stations, tracks, and rolling stock. CSXT also owns a substantial length of the Empire Corridor tracks.
Commenter	Fordock, Arleen
Comment I-202-10	EMPLOYEES of this NY State-authorized train would be hired under civil service laws of NYS??
Response	Thank you for your question regarding the employees operating the intercity passenger trains along the Empire Corridor. These employees are employed by Amtrak, a company owned by the federal government. The Amtrak employees and other railroads employees are subject to the Railway Labor Act and are considered employees of a private company.
Commenter	Fordock, Arleen
Comment I-202-11	THIS railroad, statistics/income/outgo/accident reports etc., would be added to duties of State Comptroller?
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. Intercity passenger service along the Empire Corridor is a partnership between the New York State Department of Transportation and Amtrak, who operates the trains and owns many of the stations, tracks and rolling stock. CSX also owns a substantial length of the Empire Corridor tracks. The responsibility for safety and administration of the Empire Service operations would be with the owners and operators.
Commenter	Fordock, Arleen

Comment I-202-12	Security along the route would be provided by NYS Troopers and Homeland Security & Border Patrol?
Response	Thank you for your question regarding security on the High Speed Rail Empire Corridor Program. Currently, safety and security of the right of way along the Empire Corridor is administered by the CSX Transportation Police Department, an accredited law enforcement agency, with the officers carrying the same legal powers as the New York State Police. In other areas, the right of way is protected by the Metropolitan Transportation Authority (MTA) Police, who provide protection on Metro North, and the Amtrak Police Department. These railroad police departments fully cooperate and team with the New York State Police, or other local law enforcement agencies, to investigate issues and incidents along the various railroad right of ways in New York State. In some cases, the Department of Homeland Security screens passengers boarding Amtrak trains, or partner with MTA Police or Amtrak police in monitoring train stations and terminals in New York City. The United States Border Patrol also regularly conducts reviews of passengers on trains along the Empire Corridor, based on the route's close proximity to the Canadian Border.
Commenter	Fordock, Arleen
Comment I-202-13	IF carrying all sorts of categories, including military, then a fee per pound or tonnage or tanker fee would be assessed and earn money for NYS coffers?? AND would there be less items put onto AMTRAK and other railroad companies and then put them out of business?? Trucking companies would lose business? FedEx and UPS would lose business?
Response	Thank you for your comment on the HSR Empire Corridor Program. The purpose of program is to introduce higher passenger train speeds on the Empire Corridor and to improve reliability, travel times, levels of train service and passenger amenities. The service being considered is focused on trains that carry passengers and associated luggage. The alternatives discussed in the Tier 1 EIS do not consider trains that mix freight and passengers on the same train. An evaluation of how each alternative impacts both freight and passenger operations has been considered by the FRA and NYSDOT as part of the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail.
Commenter	Fordock, Arleen
Comment I-202-14	WHEN a hazardous chemical as well as people are ON the high-speed train cars or ramps, is 100% protection provided (extinguishers or foam automatic dispensers) AND are there firehouses every 30miles or less from the rail "stations" along the length of the route (to handle that hazard or any normal type of emergency)?? Would the "911" system be called for emergencies to people or any hazard or any accident where railroad cars "jump rails" etc.?
Response	Thank you for your comments about emergency services on the High Speed Rail Empire Corridor. Amtrak and CSX Transportation share in ownership and operations of trains on the Empire Corridor. They have a rigorous program for the safe transportation of different types of fuels and chemicals by rail. This program includes training and communication programs with local fire companies and first responders in the communities traversed by their trains. As the HSR program moves forward, safety and security will be part of the process that will culminate with a safety and security certification, before projects go into revenue service. Emergency coordination between the railroads and the local communities are handled by the railroad dispatcher offices for Amtrak, CSX Transportation and the other railroad companies that have frequent reviews of response protocols and communication links.
Commenter	Fordock, Arleen

Comment I-202-15	Cell phones carried (provided by railroad company) used by all railroad employees on each schedule "run" of each high-speed train? What would be digital and/or wireless cost for passenger or employee use items?
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 EIS. Operating costs have been part of the analysis of the different alternatives by the FRA and NYSDOT in selecting the Preferred Alternative.
Commenter	Fordock, Arleen
Comment I-202-16	WHAT legal aspects of contract would protect NY State coffers, from being sued by the owners or operators or investors of this new incorporated entity??
Response	Thank you for your questions on liability and protection of the state. Currently, the program is supported by the NYSDOT and FRA and is subject to all of the rules and policies and protections of both the federal and state governments. As the program moves forward from the planning stage toward revenue operation, full operating plans will be developed.
Commenter	Fordock, Arleen
Comment I-202-17	WHAT official "authority" or "agency" of NY State &/or Federal Agcy would regulate 100% of railroad?
Response	Thank you for your comment on the High Speed Rail Empire Corridor Program. Currently, the program is supported by the NYSDOT and FRA. As the program moves forward from the planning stages toward construction and revenue operation, full operating plans will be developed.
Commenter	Freed, Wayne
Comment I-203-1	I would like to support Alternative 125.
Response	Thank you for your comment supporting the 125 Alternative and the benefits from high speed rail, which has been considered by the FRA and NYSDOT in the selection of the Preferred Alternative. In selecting Alternative 90B as the Preferred Alternative, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).
Commenter	Freed, Wayne
Comment I-203-2	If this alternative is not possible, for any reason in the future, then I would want my second choice to be alternative 110.
Response	Thank you for your comment supporting the 110 Alternative, which has been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. The Preferred Alternative, Alternative 90B, was selected over Alternatives 110 and 125, based on its substantially lower costs, impacts, and its performance. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Freeman, Jeanne A.

Comment I-204-1	I have wondered if they would ever consider putting the “High Speed Rail System” down the middle of the NYS Thruway.
Response	Thank you for your comment on the High Speed Rail Empire Corridor Program. In Alternative 125, the New York State Thruway was followed between Albany and Schenectady. In other areas, the grades, curvature of the Thruway, and availability of additional property for the high speed rail right of way in some locations, did not support following the highway. Alternative 125 was designed to help cut the distance between Albany and Syracuse by 14 miles, but one of the major drawbacks of this route is that it passes to the south of the stations on the current Empire Corridor in the Mohawk Valley between Syracuse and Albany. Therefore, 125 express service would not serve Rome, Utica, Amsterdam, and Schenectady. Alternative 90B would largely follow the existing Empire Corridor and would involve less right-of-way and environmental impacts than Alternative 125, and was also selected for the reasons described in the prior responses.
Commenter	Freeman, Jeanne A.
Comment I-204-2	If this project goes through many MANY ROADS will be closed. This affects our schools, the fire depts. and ambulance.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. The Tier 1 EIS evaluates corridor-level service improvements looking at issues including service reliability, service frequency, and train speeds and identifies a Preferred Alternative. Individual projects, or groups of projects, will undergo a second evaluation (Tier 2) to further advance designs for the Preferred Alternative. Further evaluation of the specific related roadway closures and grade crossings will be evaluated in the Tier 2 assessments.
Commenter	French, Joanne
Comment I-205-1	I would LOVE to see the Core Express option implemented.
Response	Thank you for your comments on rail options and support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Early in the alternatives identification process, higher speed (speeds of 160 mph and 220 mph) alternatives were considered, but were deemed both cost-prohibitive and would involve far greater right-of-way and environmental impacts than the Preferred Alternative 90B. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative). In selecting Alternative 90B as the Preferred Alternative, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts.
Commenter	Friedman, Jay
Comment I-206-1	The project team has put together an impressive presentation. Glad to attend.
Response	Thank you for your comments supporting the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Friedman, Mark
Comment I-207-1	Any opportunity to allow bicycles to travel more safely is extremely important to the citizens of the capital district.

Response	Thank you for your comments concerning the consideration of bicycles in the High Speed Rail evaluation process. Accessibility of bicycles has been considered in design of stations reconstructed or rehabilitated along the route and will continue to be a major consideration for future station planning. Currently, bicycles can be accommodated on the Empire Corridor, but require separate ticketing.
Commenter	Fronckowiak, Paul
Comment I-208-1	<p>As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:</p> <ul style="list-style-type: none"> -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.
Commenter	Fuller, Robert
Comment I-209-1	My comment is that walkers and cyclists should be able to safely use any replacement or restored railroad bridge over the Hudson in Albany.
Response	<p>Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge.</p>
Commenter	Fusarelli, Anthony Loreto

Comment I-210-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

- The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
- The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
- The Terminal is centrally located within a two-mile radius of city-center
- The Terminal also has secure parking facilities for up to 450 vehicles
- The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
- The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-208-1.

Commenter Fusarelli, Renee L.

Comment I-211-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

- The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
- The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
- The Terminal is centrally located within a two-mile radius of city-center
- The Terminal also has secure parking facilities for up to 450 vehicles
- The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
- The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-208-1.

Commenter Gaber, Matthew

Comment I-212-1 I made some private and public comments regarding incorporating the Toronto Metropolitan Area into the economic impact analysis and if that could possibly bring some of those omitted very high speed options back onto the table.
P.S. The busiest border crossing in Northern US is via Buffalo/Niagara Falls @ 13 million individuals entering in 2012.

Response	Thank you for your comment on the High Speed Rail Empire Corridor Program. The scope of the Tier 1 EIS focuses on the Empire Corridor from New York City to Niagara Falls. The program will improve service that operates along Empire Corridor, including Maple Leaf service that continues into Toronto. Passenger forecasts and analyses excluded trips that may have one trip end in Toronto.
Commenter	Gaber, Matthew
Comment I-212-2	I'm actually employed in the rail transit industry. the analysis that was done did not incorporate the Toronto metropolitan area. I just don't understand why that wasn't incorporated into the base analysis and if that would possibly change the -- sort of the options that were laid out and to possibly incorporate even higher speed options.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. Currently, the scope of the Tier 1 EIS focuses on the Empire Corridor from New York City to Niagara Falls, New York and passenger forecasts conservatively exclude trips that may have one trip end in Toronto.
Commenter	Gaber, Matthew
Comment I-212-3	The company that I work for, actually, has a land-speed record to have, like, 357 on a test train, about 357 miles per hour. So I mean 125 is -- to me it seems a little bit slow.
Response	Thank you for your comments on the alternatives being evaluated in the High Speed Rail Empire Corridor Program. During the selection of the alternatives for review in the Tier 1 EIS, alternatives with speeds of 160 mph and 220 mph were considered but not advanced. It was determined that the range of options advanced would be those with trains operating at 90, 110 and 125 miles per hour. It was determined that operating trains at higher speeds would have greater impact on the environment, require more financial investment to construct and require more public resources to operate. In selecting Alternative 90B as the Preferred Alternative for the High Speed Rail Empire Corridor Program, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts. Comments from the public, relating to the different service alternatives, have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Gaffney, Dennis
Comment I-213-1	What a wonderful legacy it would be to have a bike path across that bridge, linking both sides of the river for cyclists and walkers.
Response	Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge .
Commenter	Gale, Peter
Comment I-214-1	As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons: -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.

-The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York

-The Terminal is centrally located within a two-mile radius of city-center

-The Terminal also has secure parking facilities for up to 450 vehicles

-The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development

-The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degree programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter **Gallagher, Kevin**

Comment I am in support of the highest speed passenger rail system possible.
I-215-1

Response Thank you for your comments supporting the High Speed Rail Empire Corridor Program and for the need for improving rail passenger service on the route. During the selection of the alternatives for review in the Tier 1 EIS, alternatives with speeds of 160 mph and 220 mph were considered but not advanced. It was determined that the range of options advanced would be those with trains operating at 90, 110 and 125 miles per hour. In selecting Alternative 90B, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts. Comments from the public have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter **Gallagher, Kevin**

Comment I believe connections between regions are extremely valuable to system success. In order to be complete, the New York State Plan must coordinate with these other organizations and include connections to Cleveland, Toronto, Montreal and Boston. That is, contingent connection routes to these other areas must be included within this plan for future implementation.
I-215-2

Response Thank you for your comment in pointing out the need to consider connections to areas outside of the Empire Corridor. Currently, the High Speed Rail Empire Corridor Program focuses on improvements between New York City and Niagara Falls. The Tier 1 EIS addresses Amtrak connections regionally to other destinations (including Boston, Toronto, and Montreal), and improvements to Empire Service will benefit travel on these regional

lines. Comments from the public, for improvements to the service, have been considered by the FRA and NYSDOT in the development of the Service Development Plan and the selection of the Preferred Alternative.

Commenter **Gallagher, Kevin**

Comment I-215-3 Consider stations that balance serving a population center and maintaining system speed.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program. The Tier 1 EIS is a corridor level evaluation that considers use of the existing stations only. One of the advantages of the Preferred Alternative, Alternative 90B, is that it maintains and improves service to existing stations (unlike Alternative 125, for which express service would bypass certain cities along Empire Corridor West). The inclusion of additional stations along the Empire Corridor could be part of future studies for expanding service.

Commenter **Gallagher, Kevin**

Comment I-215-4 The term "High Speed Rail" has not been legally defined and its use is misleading. In the 1903's there were trains in the US with peak speeds between 95 and 115 mph. It is my opinion that the term should not be used for anything under 105 MPH. To avoid misleading the public, I ask that a different term, such as medium or improved speed rail, be used from now on for the slower options.

Response Thank you for your comment on the High Speed Rail Empire Corridor Tier 1 EIS. In reviewing the types of technologies to be used in providing the service, the focus was on using systems that would allow for connecting with the existing rail network, and development that was within possible funding levels and time constraints for construction. During the selection of the alternatives for review in the Tier 1 EIS, alternatives with speeds of 160 mph and 220 mph were considered but not advanced. It was determined that the range of options advanced would be those with trains operating at 90, 110 and 125 miles per hour. It was determined that operating trains at higher speeds would have greater impact on the environment, require more financial investment to construct and require more public resources to operate. Comments from the public, relating to the different service alternatives, have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.

Commenter **Gallagher, Kevin**

Comment I-215-5 To the best of my knowledge, there are 4 rail routes (active and historic) between Albany and NYC but I see only one path considered for passenger service. Is there an overlooked alternative that would allow greater speeds in that section?

Response Thank you for your interest in the High Speed Rail Empire Corridor Program. The HSR Program outlined in the Tier 1 EIS focuses on improvements and alternatives on or near the current alignment of the rail passenger service between Albany and Niagara Falls, New York. Additional alternatives that were considered and eliminated from further study can be found in Chapter 3 of the Tier 1 EIS. In selecting Alternative 90B as the Preferred Alternative, the FRA and NYSDOT, selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts.

Commenter **Gallagher, Kevin**

Comment I-215-6 How will the many at-grade crossings be modified or eliminated (~55 between Buffalo and Syracuse)?

Response Thank you for your comments on the High Speed Rail Empire Corridor Program. Chapters 2 and 3 address safety for the existing corridor and the program alternatives. Comments from the public, discussing the safety of the operation of the high speed trains for both grade

	crossings and along the right of way, have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Gallagher, Kevin
Comment I-215-7	During the building of the NYS Thruway there are associated stories of profiteering, related to acquiring right-of-ways. Will there be any protections made so that legitimate landowners are fairly compensated, the public is not cheated, and other criminal behavior is discouraged, and if necessary, severely prosecuted?
Response	Thank you for your comments about issues regarding the implementation of a high speed rail corridor in New York State. In selecting Alternative 90B as the Preferred Alternative for the High Speed Rail Empire Corridor Program, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and property impacts. During Tier 2 assessments, refinements in design will include efforts to avoid and minimize impacts on adjoining buildings and properties. As the program moves forward, the contracts and construction would be subject to the laws and regulations of the federal government and the State of New York.
Commenter	Gallagher, Kevin
Comment I-215-8	will passenger service adversely effect freight service, or reduce future freight capacity potential?
Response	Thank you for your comments, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. The importance of preservation and the improvement of freight rail traffic to the economy of New York State has been a critical factor in the selection of the Preferred Alternative.
Commenter	Gallagher, Kevin
Comment I-215-9	- Improve the planning process. The process needs empowered citizen representatives. When I say representatives, I don't mean politicians. I mean individual citizens including members of transportation groups. Furthermore this process requires wider inclusion of individuals and companies that have first-hand experience with planning, designing, building and operating true High Speed Rail systems, such as from Europe and Asia. Also, since the plan needs to include connections to other regions, representatives from those regions should be included. - Just as important, the decision process must include the same type of citizen representatives.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. The program incorporated and actively sought out public involvement and participation in the process. The different avenues of public outreach can be found in Chapter 7 of the Tier 1 EIS and included, but were not limited to, media outreach, key milestone newsletters, program website, public scoping meetings, and public hearings.
Commenter	Gallagher, Kevin
Comment I-215-10	There seems to be external and internal limitations that have been placed on the scope of the projects. At the very least, the connections to Cleveland, Toronto, Montreal, and Boston need to be available for near future consideration.
Response	Thank you for your comment. The scope of the High Speed Rail Empire Corridor Program focuses on improvements between New York City and Niagara Falls. Amtrak regional lines, such as the Maple Leaf, Lake Shore Limited, and Adirondack Lines provide access and

connections to the cities referenced in your comment. Improvements to Empire Corridor service will improve service on these regional lines. Comments from the public, for improvements to the service, have been considered by the FRA and NYSDOT in the development of the Service Development Plan and the selection of the Preferred Alternative.

Commenter **Gallagher, Kevin**

Comment I-215-11 Rail stations need not be in the city's center to serve regions. However, placing rail stations in the center of cities may interfere with service for the region.

Response Thank you for your comment regarding the location of stations on the Empire Corridor. The Tier 1 EIS is a corridor level evaluation that considers use of the existing stations. The inclusion of additional stations along the Empire Corridor could be part of future studies for expanding service.

Commenter **Gallagher, Kevin**

Comment I-215-12 It is my opinion that the term High Speed Rail should not be used for anything under 105 miles per hour. To avoid misleading the public, I ask that a different term, such as medium or improved speed, be used for these lower speed options.

Response Thank you for your comment regarding the definition of high speed rail. Comments from the public, relating to cost of the different choices and required public investment, have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. As presented in the Tier 1 EIS and defined by the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), "high speed rail corridors" are corridors where trains operating at speeds of 90 mph could be reasonably expected.

Commenter **Gallagher, Kevin**

Comment I-215-13 I have concerns about approximately fifty-five grade crossings between Buffalo and Syracuse, potential interactions between trains, cars, people, ATVs, snowmobiles, wild animals and the environment and the potential for profiteering related to right-of-ways. I'd also need to know that there is not going to be an adverse effect of passenger service on freight service.

Response Thank you for your comments about the grade-crossings along the Empire Corridor. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail. Chapters 2 and 3 address safety for the existing corridor and the program alternatives.

More detailed design will occur in Tier 2 assessments, and treatments for specific grade crossings could be considered during the development of individual projects designed to implement the Preferred Alternative. Comments from the public, discussing the safety of the operation of the high speed trains for both grade crossings and along the right of way, have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter **Ganjian, Ahmad**

Comment I-216-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

- The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
- The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York

-The Terminal is centrally located within a two-mile radius of city-center
 -The Terminal also has secure parking facilities for up to 450 vehicles
 -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
 -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degree programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter Gardner, Diane

Comment I-217-1 I am completely opposed to a new PUBLICLY funded high speed rail service. If there were enough demand for the rail service and it was profitable, the private sector would already be supplying this service.

Response Comments from the public on the High Speed Rail Empire Corridor Program have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 EIS.

Commenter Gataletto, Donna

Comment I-218-1 I am very concerned about the proposed high-speed passenger and freight rail system. The Environmental Impact Statement associated with each proposal does not acknowledge that some of the freight cars will be carrying volatile, crude oil from the Bakken Shale. Both the passenger trains and freight trains would increase speed under at least some of these proposals,

Response Thank you for your comments about rail safety. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail. Amtrak and CSX Transportation share in ownership and operations of trains on the Empire Corridor. CSX Transportation has a vigorous program for the safe transportation of all different types of fuels and chemicals by rail. This program includes training and communication programs with local fire companies and first responses in the communities traversed by their trains. As the program moves forward, a comprehensive safety and security process will be part of the program that will culminate with a safety and security certification, before the program goes into revenue service.

Commenter Gataletto, Donna

Comment I-218-2 I believe the DOT should evaluate the danger of this kind of plan (given the deadly train explosion in Quebec and other recent derailments) and should upgrade the tankers before putting in this kind of crude substance.

Response	Thank you for your comments. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail. Chapters 2 and 3 address safety for the existing corridor and the program alternatives. Comments from the public, discussing the safety of the operation of the high speed trains for both grade crossings and along the right of way, have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Geleta, Marion
Comment I-219-1	The High Speed Rail, which would impact my area of residency. Morris Road is highly residential and is located in the Pinebush Preserve. We were looking at alternate route for the RR crossing to go through lands that were donated to the town of Colonie from LIA Auto, these lands would have little impact on the residential and wildlife preserve, I would like to see the plans proposed for the crossing and may I add my comments as to the 1994 committee I attended with DOT on a bus ride with them. Could you please look into what they proposed on the high rise bridge going over Morris Road near the Tire Warehouse and connecting to Central Ave, this was also done on Hamburg Street in Rotterdam to avoid residential concerns and no disruption to the wildlife.
Response	<p>Thank you for your questions about the alternative alignments in the Town of Colonie. In selecting Alternative 90B as the Preferred Alternative for the High Speed Rail Empire Corridor Program, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and environmental impacts.</p> <p>Chapters 2 and 3 address safety for the existing corridor and the program alternatives. Comments from the public, discussing the safety of the operation of the high speed trains for both grade crossings and along the right of way, have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. As projects are considered in the Tier 2 assessments for the program, the impact of railroad operations on grade crossings can be reviewed with a focus on promoting safety.</p>
Commenter	Georgi, Ethan
Comment I-220-1	Disappointed to learn that pedestrian and bicycle access to the Livingston Avenue Bridge has been omitted. Communities need this connection for walkable and livable cities. Last year the governments on both sides of the bridge heartily endorsed ped/bike access via the LAB. Now it's gone? We need this.
Response	<p>Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge.</p>
Commenter	Geraci, Christine M.
Comment I-221-1	How would this project improve current travel times between Albany and New York City in order to make the train a viable commuter option for people who wish to take advantage of job opportunities in New York City but still live in the Capital Region?
Response	Thank you for your comment. Travel times between New York City and Albany were estimated to be approximately 2:10. The full listing of travel times can be found in Appendix D - Rail Network Operations Simulation, of the Tier 1 EIS.
Commenter	Getz, Orrin

Comment I-222-1	The 110 mph alternative should be selected as the final alternative for the Tier 1 DEIS. This alternative provides the most benefit for the proposed cost of \$6.25 billion. Also, the 110 mph alternative provides the most realistic plan for elements that can be built with a realistic amount of environmental impact.
Response	Thank you for your comment in support of Alternative 110, which has been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternatives 90B and 110 would restore large sections of third and fourth track, but Alternative 90B would constrain more of the additional trackage to the existing right-of-way, substantially reducing costs and impacts. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property.
Commenter	Giannino, Luca, D.S. Ray Middle School, D.S. Ray Middle School
Comment I-223-1	I think that we should have a High Speed Rail because it would be a fast, reliable, efficient, and comfortable for passengers. High Speed Rails would also improve our economic future and environmental future. In conclusion I think that we should have High Speed Rail in New York State.
Response	Thank you for your comments supporting the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	DiFiore, Joe
Comment I-224-1	it's a little bit scary some of the options that are listed on here that we're considering, that we're considering anything less than the 125 Option. if you're thinking about anything less than a 125 Option, please just see what else is out there and see that this is really the bare minimum of what we can do and what we really should be doing.
Response	Thank you for your comment on the High Speed Rail Empire Corridor Program. In selecting Alternative 90B as the Preferred Alternative, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative). One of the drawbacks of Alternative 125 is that express service would not be directly provided to Niagara Falls, Rome, Utica, Amsterdam, and Schenectady.
Commenter	DiFiore, Joe
Comment I-224-2	I run a small B & B here in Rochester. We get travelers from all over the world. I could tell you it's a little bit embarrassing. They use New York City as their major hub for coming in. And when I tell them: Hey, Amtrak is how you're going to get into Rochester. That's your best option. And they look up the time it's going to take them. They're a little -- it's a little -- there's a little disbelief there if they're coming from a country that has real, actual High Speed Rail, or even an efficient rail system.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. Alternative 90B, the Preferred Alternative, would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would also shorten the trip from New York City to Niagara Falls by 1½ hours.
Commenter	Gibbons, Maggie

Comment
I-225-1

As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

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- The Terminal is centrally located within a two-mile radius of city-center
- The Terminal also has secure parking facilities for up to 450 vehicles
- The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
- The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response

Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter Gifford, Gladys

Comment
I-226-1

I am writing in support of the High Speed Rail project in the Empire Corridor. I have been able to view the particulars about the alternatives, and I support the 110 mph alternative. I am opposed to the construction of an alternative right-of-way for the 125 mph version because of its environmental impacts.

Response

Thank you for your comments in support of Alternative 110 for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Because of the required property acquisitions, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance.

Commenter Gilchrist, Tim

Comment
I-227-1

It is not clear if it is improving rail for the sake of improving rail or to reduce travel times between city pairs, or to reduce emissions and save fuel.

Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. It is anticipated that the proposed improvements to the rail service along the Empire Corridor will reduce travel times and will encourage the public to shift from using automobiles. This, in turn, will reduce pollutant emissions and improve New York State's carbon footprint. The net annual operational benefits for the Preferred Alternative would be roughly equivalent to eliminating the emissions associated with the energy and electricity consumption of 2,500 to 4,200 average U.S. single family homes every year.
Commenter	Gilchrist, Tim
Comment I-227-2	The titles of the Alternatives are misleading. The use of maximum speed does not properly describe the actual speeds or travel times and in the future a better title such as average speed or travel time Albany to Buffalo should be used.
Response	Thank you for your comment. The titles for the alternatives were derived from the engineering standards that would be necessary to support train operations outlined in the particular alternative. Average speed or travel time would vary too greatly depending on the level of physical improvements made to properly represent the name of an alternative.
Commenter	Gilchrist, Tim
Comment I-227-3	With the common infrastructure improvements needed for any of of the 90 alternatives or the 110 alternative calls for the future work to be tiered in a manner which provides incremental benefits. The projects which produce the greatest time savings at the lowest cost should be prioritized and among those projects those that have the greatest chance of success with CSX should be done first.
Response	Thank you for your comments on project prioritization and planning needs. We agree with your assessment, and the phasing of the projects was considered in the development of the Service Development Plan. Economic costs and benefits of each alternative for the High Speed Rail Empire Corridor Program have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Because of the required property acquisitions, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance. Because Alternative 90B is situated largely within the existing right-of-way, it can be constructed in substantially less time than the highest speed alternative (Alternative 125) and will begin to confer benefits within 2 to 5 years after start of construction. Chapters 5 and 6 of the Tier 1 EIS describe the costs and benefits of the program alternatives.
Commenter	Gilchrist, Tim
Comment I-227-4	The 125 alternative should be dropped from any consideration.
Response	Thank you for your comment concerning the 125 Alternative, which has been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative), in addition to the reasons outlined above.
Commenter	Gilchrist, Tim
Comment I-227-5	Exhibit ES-4 is very misleading, and shares a problem common throughout the DEIS, while the DEIS is focused on the Albany west corridor the statistics and benefits are displayed for the entire corridor.

Response	Thank you for your comment regarding the benefits of each alternative. The High Speed Rail Empire Corridor Program focused on providing improvements to passenger train service along the entire route from New York City to Albany and to Buffalo-Niagara Falls. The Tier 1 EIS studies alternatives that require improvements to both segments of the Empire Corridor, and trains to and from western New York will benefit from improvements to the route between Albany and New York City.
Commenter	Gilchrist, Tim
Comment I-227-6	The benefits such as increased travel time and cost should clearly line out the costs west of Albany.
Response	Thank you for your comments. The benefits of each alternative for the High Speed Rail Empire Corridor Program have been considered by FRA and NYSDOT in the selection of the Preferred Alternative, giving consideration to reduced travel times for the portion of Empire Corridor west of Albany. Alternative 90B will provide approximately 370 miles of additional trackage, largely situated along Empire Corridor West, to better segregate passenger and freight traffic. Alternative 90B would double the service frequency along Empire Corridor West and will reduce travel times between New York City and Niagara Falls by 1 ½ hours in 2035, compared to the Base Alternative.
Commenter	Gilchrist, Tim
Comment I-227-7	A true comparison of the benefits of each alternative, would be to calculate the 30 year time savings for passengers from Buffalo, Rochester, Syracuse to Albany or NYC and compare the cost of capital and 30 years of operating expenses.
Response	Thank you for your comments. Economic costs and benefits of each alternative for the High Speed Rail Empire Corridor Program, including analysis of capital, operating, and maintenance costs, have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. Chapters 5 and 6 of the Tier 1 EIS describe the costs and benefits of the program alternatives.
Commenter	Giles, William
Comment I-228-1	The higher the speed (and thus the shorter the journey) between Buffalo and New York City, the better. So I support Alternative 125.
Response	Thank you for your comments in support of Alternative 125 for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. In selecting Alternative 90B as the Preferred Alternative for the High Speed Rail Empire Corridor Program, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).
Commenter	Giles, William
Comment I-228-2	However, regardless of the option chosen, the most crucial element is to consolidate train stations in Western New York, closing Depew and Exchange Street stations in favor of Central Terminal. Central Terminal is a beloved landmark and its location ideal for train service to Chicago, etc.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-

Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. Improvement to the passenger rail facilities in the City of Buffalo area is an important goal of the High Speed Rail Empire Corridor Program. NYSDOT has implemented upgrades at the existing rail station at Buffalo-Depew to improve/rehabilitate the parking lot and enhance passenger access to comply with Americans with Disabilities Act requirements. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter Gilrein, John

Comment I support the fastest high speed rail option possible.
I-229-1

Response Thank you for your comments supporting the High Speed Rail Empire Corridor Program and for the need for improving rail passenger service on the route, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B would also shorten the trip from New York City to Niagara Falls by 1½ hours. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter Glende, Amy Marie

Comment As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:
I-230-1

- The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
- The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
- The Terminal is centrally located within a two-mile radius of city-center
- The Terminal also has secure parking facilities for up to 450 vehicles
- The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
- The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-228-2.

Commenter Glica, Shelley

Comment
I-231-1

As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

- The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
- The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
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- The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response

Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-228-2.

Commenter Godlewski, PE, Stephan

Comment
I-232-1

I am writing to express my support for restoring pedestrian/bicycle access to the Livingston Avenue Bridge.

Response

Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge.

Commenter Gollhardt, Andrea

Comment
I-233-1

As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

- The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
- The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
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- The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-228-2.
Commenter	Gomez, Larry
Comment I-234-1	I whole hardily support this very important initiative. I think it does not go far enough. We need a rail system that can let people work in NYC area and have people commute from Albany, Utica and Syracuse. There should be branch lines from Watertown, Binghamton etc.
Response	Thank you for your comments supporting the High Speed Rail Empire Corridor Program and for the need for improving rail passenger service on the route, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B will better serve travelers destined to and from Buffalo and other points along Empire Corridor West by providing more frequent and faster service. Alternative 90B would double the number of trips on Empire Corridor West. Unlike the Alternative 125 express service, which would bypass existing stations at Schenectady, Amsterdam, Rome, Utica, and Buffalo-Depew, it will improve service to these existing stations.
Commenter	Goodwin, Catherine
Comment I-235-1	I am NOT in favor of this high speed rail because I think the New York State DOT needs to make infrastructure improvements its' TOP priority.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 DEIS.
Commenter	Goodman, Ryan
Comment I-236-1	Having the Buffalo Central Terminal as a part of this is a MUST!
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-228-2.
Commenter	Gordon, James
Comment I-237-1	Of these two plans, the 110 plan appears to be the most cost effective. Unfortunately, both of these plans fall short.
Response	Thank you for your comment in support of Alternative 110. In selecting Alternative 90B as the Preferred Alternative for the High Speed Rail Empire Corridor Program, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts. Alternative 90B would also shorten the trip from New York City to Niagara Falls by 1½ hours. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property.
Commenter	Gordon, James
Comment I-237-2	I propose connecting these two mega-regions using a different corridor from the proposed Empire corridor. A much more direct route would be considerably shorter than the

proposed Empire corridor. I suggest using the old Delaware-Lackawanna route between New York City and Buffalo, NY, as shown in the map below (map source Wikipedia).

Response Thank you for your comment on the HSR Empire Corridor Program. The program considers improvement alternatives for the Empire Corridor which connects New York City to Albany through the Hudson Valley then west from Albany-Rensselaer to Niagara Falls, through Mohawk Valley, and across Central and Western regions of New York City. Use of the Erie and Lackawanna abandoned right of ways would not follow the areas outlined in the program and does not service the same cities as the Empire Corridor.

Commenter Gordon, James

Comment I-237-3 The Buffalo terminus would be at Buffalo's Central Terminal. This beautiful multi-modal terminal is undergoing renovation and will be ready to handle passengers very soon. It has parking for hundreds of cars. Amtrak's Maple Leaf and Lake Shore Limited lines already go through Central Terminal, although they don't stop there.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter Gossett, Linda

Comment I-238-1 I would love to see the Central Terminal in use again for rapid rail transit.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the prior response.

Commenter Gough, Eliza J.

Comment I-239-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

- The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
- The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
- The Terminal is centrally located within a two-mile radius of city-center
- The Terminal also has secure parking facilities for up to 450 vehicles

-The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
 -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-237-3.

Commenter Granston, Kareem

Comment I-240-1 I support higher speed rail service along the Empire Corridor.

Response Thank you for your comment in support of the High Speed Rail Empire Corridor Program, which has been considered by FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter Grauer, Jon

Comment I-241-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:
 -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
 -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
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 -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
 -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-237-3.

Commenter Gregory, Jr., Thomas P.

Comment I-242-1 My biggest concern that I have noted in oral presentation is that the High Speed Rail proposal NOT be considered independently of the 88\$ increase in freight traffic anticipated by 2035.

Response Thank you for your comment on the High Speed Rail Empire Corridor Program, which has been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-

	minutes per 100 train miles operated for freight trains of all of the alternatives considered. The importance of preserving and improving freight rail traffic to the economy of New York State has been an important factor in the selection of the Preferred Alternative.
Commenter	Gregory, Jr., Thomas P.
Comment I-242-2	This further supports having shared track capacity in that a third "shared Track" provides higher efficiencies in transporting not only passengers but also freight.
Response	Thank you for your comment. As outlined above, the Preferred Alternative, Alternative 90B, would provide additional trackage and would improve both passenger and freight rail capacity and operations. The Tier 1 EIS reviews the operation of multiple tracks along the Empire Corridor, including developing specific track diagrams and modeling/simulation of rail operations, to identify the necessary infrastructure projects that will improve travel times and the reliability of service. The public's comments on the program have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 DEIS.
Commenter	Gregory, Jr., Thomas P.
Comment I-242-3	New York should develop a third track to increase freight service in conjunction with an increased flexibility for rail planner to allow for additional passenger trains.
Response	Thank you for your comment on freight service operations on the Empire Corridor, which has been considered by FRA and NYSDOT in the selection of the Preferred Alternative. The Preferred Alternative, Alternative 90B, will provide over 280 miles of third track, largely located within the existing railroad right-of-way to better segregate passenger and freight rail operations. Improvement of passenger rail service while maintaining freight operations along the Empire Corridor is a major goal of the High Speed Rail Empire Corridor Program.
Commenter	Gregory, Jr., Thomas P.
Comment I-242-4	I want future investment in rail funding to be for enhancing Freight rather than passenger service. In addition, should a third rail be developed It should support a gross weight capacity of an estimated 325,000 pounds which I believe is the Industry Standard under adoption. A shared third rail would support an industry reported to employ 175,000 American and that delivers 70% of domestically produced automobiles and coal. Nearly 40% of all freight moves along the rail. The next biggest competitors are Truck and Pipeline. I strongly urge the committee considering this question to develop this corridor to its fullest capacity- but as a corridor for the movement of Freight rather than passengers.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As discussed in the prior responses, the Preferred Alternative would add approximately 370 miles of additional trackage, which would benefit freight operations. This new track, including third track, would be added primarily along Empire Corridor West, where freight operations are heaviest.
Commenter	Gregory, Jr., Thomas P.
Comment I-242-5	The two studies are High Speed Rail in America. It's a 2011 study sponsored by the Rockefeller Institute. And I looked at the other study. It was a National Rail Freight Infrastructure Capacity of Investment Study, which was put together by the Association of American Railroads. In 2035, the American Railway Association says that we will have utilized all of our surplus capacity for moving freight.

I don't support a dedicated rail. And the reason why is because our freight carriers are going to need that capacity.

The Rail Institute in looking at certain aspects they said: Look it, we can't look at trucks anymore because, guess what, that capacity, our road capacity, is almost used up right now. We can't look at airplanes anymore because, guess what, you can't safely increase the number of flights going from here to there. The only thing we have for us now, the only economy scale that we have now, is our rails. Share that rail with CSX. Keep our cost down.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. Minimizing interference with freight rail operations was one of the six performance objectives of the High Speed Rail Empire Corridor Program.

Commenter Greiner, Richard

Comment I-243-1 If the State has billions of extra dollars to fund a high speed rail why don't you cut taxes and make the state more business friendly and actually do something that's going to help this State.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 DEIS.

Commenter Grekulak, Stephen

Comment I-244-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

- The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
- The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
- The Terminal is centrally located within a two-mile radius of city-center
- The Terminal also has secure parking facilities for up to 450 vehicles
- The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
- The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including

Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter Griehl, Mary

Comment I-245-1 The train at 125 m is a game changer.
With a movie film industry coming to Dewit it could bring people to and from NYC in a day and back extremely important for that type of industry.

Response Thank you for your comments supporting the 125 Alternative, which have been considered in the selection of the Preferred Alternative. In selecting Alternative 90B as the Preferred Alternative for the High Speed Rail Empire Corridor Program, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).

Commenter Guarneri, Joanne

Comment I-246-1 I am sending this as a recommendation that the Empire Corridor Project be developed as quickly as possible.

Response Thank you for your comments supporting the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter Gubbins, Barbara

Comment I-247-1 A high speed train would be more convenient!!

Response Thank you for your comment in support of the High Speed Rail Empire Corridor Program, which has been considered by FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter Guguentz, Cindy

Comment I-248-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:
-The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
-The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
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-The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-244-1.
Commenter	Guilmette, Lou
Comment I-249-1	Railroad passenger service has been dead since the 1950's, let it rest in peace. The American citizen drives a car, and will continue to drive some sort of similar vehicle forever. We are too independent a society to go back to trains. Trains have a place in local commutes but long distance, not here, not in the US.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 DEIS.
Commenter	Gyurik, Gloria
Comment I-250-1	If the people of the Mohawk Valley will not have access to a CONVENIENT rail service, i.e. Amsterdam or Fonda station, I don't see the necessity for another boondoggle project.
Response	Thank you for your comments about preserving and offering intercity rail passenger service for the City of Utica, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was designed to help cut the distance between Albany and Syracuse by 14 miles, but one of the major drawbacks of this route is that it passes to the south of the stations on the current Empire Corridor in the Mohawk Valley between Syracuse and Albany. Therefore, 125 express service would not serve Rome, Utica, Amsterdam and Schenectady. The Preferred Alternative, Alternative 90B, was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance. As discussed in Chapter 3 of the Tier 1 EIS, the Preferred Alternative would double the frequency of service to Utica.
Commenter	Hacker, Abby
Comment I-251-1	please do not allow the sncf, the French railway, to build the new high speed rail for new York.
Response	Thank you for your interest in the High Speed Rail Empire Corridor Program. Currently, the project is sponsored by NYSDOT and the Federal Railroad Administration (FRA) and does not include any participation by railroads outside of the United States.
Commenter	Hackett, Alice
Comment I-252-1	I would like to voice my support for the high speed rail service between New York City and Upstate New York.
Response	Thank you for your comment in support of the High Speed Rail Empire Corridor Program, which has been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.
Commenter	Hall, Addie
Comment I-253-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations. We rely on the existing freight rail network for the efficient, reliable and economical transportation of goods.
Response	Thank you for your comments, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. The Preferred Alternative,

Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. Improvement of passenger rail service while maintaining freight operations along the Empire Corridor is one of the major goals for the HSR Empire Corridor Program.

Commenter Hall, Addie

Comment I-253-2 I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program. As discussed in the prior response, the Preferred Alternative would provide additional sections of third and fourth track to better segregate passenger and freight rail operations. The importance of preserving and improving freight rail traffic to the economy of New York State has been an important factor in the selection of the Preferred Alternative.

Commenter Hall, Jane

Comment I-254-1 I am very much in favor of a dedicated high-speed rail system connecting major upstate cities such as Syracuse with New York City and Niagara Falls.

Response Thank you for your comments supporting the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter Hall, Peter

Comment I-255-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

- The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
- The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
- The Terminal is centrally located within a two-mile radius of city-center
- The Terminal also has secure parking facilities for up to 450 vehicles
- The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
- The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including

Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter Hanavan, Ian

Comment I-256-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

- The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
- The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
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- The Terminal also has secure parking facilities for up to 450 vehicles
- The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
- The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the prior response.

Commenter Hanks, Kelsey

Comment I-257-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

- The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
- The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
- The Terminal is centrally located within a two-mile radius of city-center
- The Terminal also has secure parking facilities for up to 450 vehicles
- The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
- The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-255-1.

Commenter	Hanna, Christopher
Comment I-258-1	I am writing in support of the proposed pedestrian bicycle route on the Livingston ave rail road bridge that is slated to be rebuilt.
Response	Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge .
Commenter	Hannon, Don, Hannon Transportation Consulting, Hannon Transportation Consulting
Comment I-259-1	Having worked in NYSDOT for more than 25 years I am well aware of the importance of environmentally sound, economically-wise transportation infrastructure investments. After reviewing all the available information on the High Speed Rail Empire Corridor Program I am in full support of Alternative 110 and commend the Department and all involved in producing such a high-quality, well researched analysis.
Response	Thank you for your comments in support of Alternative 110 and the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Because of the required property acquisitions, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance.
Commenter	Hardy, Joseph
Comment I-260-1	I am writing you in support of the restoration of the pedestrian / bicycle walkway on the planned rebuilding of Albany's Livingston Avenue Railroad.
Response	Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge .
Commenter	Harf, Mark
Comment I-261-1	Please do NOT bypass Utica as a stop in any of your high speed rail plans.
Response	Thank you for your comment, relating to preserving and providing train service for the City of Utica, which has been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B will provide improvements in service to currently served cities, such as Utica, and would double the frequency of service. One of the drawbacks of Alternative 125 is that it would bypass cities such as Utica, so express service would not be directly provided to Niagara Falls, Rome, Utica, Amsterdam, and Schenectady.
Commenter	Harner, Janet
Comment	We do not need a new terminal!

I-262-1

Response Thank you for your comment that a new terminal is not needed as part of the High Speed Rail Empire Corridor Program, which has been considered by FRA and NYSDOT in the selection of the Preferred Alternative. The program focuses on improvements for corridor-level service, and improvements to individual station sites (including at Rochester and Penn stations) have largely been performed as separate, independent projects.

Commenter Harner, Janet

Comment I don't care about the high speed option; just improve upon the existing service and then explore other improvements as ridership increases.
I-262-2

Response Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.

Commenter Harnischfeger, Mark and Monica

Comment We should spend ZERO money on this project.
I-263-1

Response Thank you for your comment, relating to the High Speed Rail Empire Corridor Program, which has been considered by FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter Harrington, Bill

Comment From a Buffalo perspective, train travel to Toronto is important (and presently infrequent on both sides of the border). I see that the proposed scope of projects don't address that, but keep in mind that getting to Niagara Falls, NY at the point across the river from the Niagara Falls, Ontario station would be important to provide for easy train travel to Toronto. I understand that the Toronto commuter rail system, GO TRAIN, may in a few years, extend into the Niagara Region so easy travel may eventually be possible if the US connection is done correctly (currently, it does run on summer weekends, albeit not frequently with only a couple trips per day).
I-264-1

Response Thank you for your comments on the need for connections from Niagara Falls to Toronto, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. The High Speed Rail Empire Corridor Program focuses on improvements between New York City and Niagara Falls. The program will improve service that operates along Empire Corridor, including Maple Leaf service that continues into Toronto. Further improvements or enhancements to the service can be studied in the future, and operating timetables can be further developed as part of Tier 2 assessments.

Commenter Harrington, Bill

Comment Rochester and Buffalo as essentially one metro area (for professional sports in particular plus more than a few daily commuters from one region into the other). Together, we comprise almost 2.5 Million people, essentially a major US metro area, not fully recognized by marketers and economists. Frequent train travel between the regions would benefit both
I-264-2

Response Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B will double the frequency of service along Empire Corridor West servicing the cities of Rochester and Buffalo. Alternative 90B would also shorten the trip from New York City to Niagara Falls by 1½ hours. Details on the levels of service that will be provided can be found in the Tier 1 EIS-Appendix D, Rail Network Operations Simulation.

Commenter	Harrington, Bill
Comment I-264-3	Eventually, besides the current proposed line running through Batavia, one should consider a second line extending east from Niagara Falls through Lockport and the other Erie Canal towns.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. The current focus of this program is on improving intercity rail passenger service between New York City and Niagara Falls. Improving service to Lockport and the other Erie Canal town areas is not part of this program.
Commenter	Harrington, Bill
Comment I-264-4	Finally, frequent predictable service at 80mph would be good enough and preferred over true high speed rail if enough funds are available for only occasional high speed travel in the corridor.
Response	Thank you for your comment, which has been considered in the selection of Alternative 90B as the Preferred Alternative. As noted in the Tier 1 FEIS, Alternative 90B would double the service frequency along Empire Corridor West and would result in the best overall on-time performance for Amtrak service in 2035 of all of the alternatives considered.
Commenter	Harrington, Bill
Comment I-264-5	I would like to add the idea that I think we should start thinking about Buffalo and Rochester as potentially being a single metropolitan area in many respects. We share so many attributes. Our distance seems great at times. There is a lot of space between the two cities, but we're certainly no wider the width of greater Los Angeles which certainly things of itself as a single metropolitan area. We have 2.5 million people roughly between the two regions, major metropolitan area in the United States, and certainly we think of ourselves as a significant metropolitan area for many aspects of our lives, professional sports being perhaps the most one dating, but there are more than a few people that commute between the two areas.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. Alternative 90B will double the frequency of service along the portion of Empire Corridor servicing Buffalo and Rochester. Ridership and revenue opportunities were part of the considerations used by the FRA and NYSDOT in selecting the Preferred Alternative for the program. In addition, the Service Development Plan considers service strategies that promote increased ridership of intercity passenger trains along the Empire Corridor.
Commenter	Harrington, Bill
Comment I-264-6	I also think you ought to think about the possibility of rail extending east from Niagara Falls through the canal center, Lockport, Medina, Albion, Spencerport, Brockport. Those towns have stagnated over many decades. Rail connections to Rochester and Buffalo and I think by the way that would include probably a connection from Lockport to Buffalo though I would hope that the local transit system in Buffalo would accommodate that.
Response	Thank you for your comments. The High Speed Rail Empire Corridor Program outlined in the Tier 1 EIS focuses on improvements and alternatives near the current alignment of the rail passenger service between Albany and Niagara Falls, New York. Selection of the Preferred Alternative, by the FRA and NYSDOT, focused on the alternatives servicing Empire Corridor, as outlined in the Tier 1 EIS.
Commenter	Harris, Jason

Comment I-265-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

- The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
- The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
- The Terminal is centrally located within a two-mile radius of city-center
- The Terminal also has secure parking facilities for up to 450 vehicles
- The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
- The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter Harris, Louise

Comment I-266-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

- The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
- The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
- The Terminal is centrally located within a two-mile radius of city-center
- The Terminal also has secure parking facilities for up to 450 vehicles
- The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
- The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with

	evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the prior response.
Commenter	Haun, Mark
Comment I-267-1	Of course travelers would love to get to their destinations in less time. But I fail to understand what sense it makes to spend this amount of money when, except for New York City, there is no practical method of transportation available once the traveler reaches his destination.
Response	Thank you for your comments relating to the accessibility of local transit from the train stations for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. Station locations identified in the Tier 1 EIS, in most cases, provide access to the public for both public transit and automobiles.
Commenter	Haynes, Jimmy
Comment I-268-1	Thanks for the improvements and upgrades to help move passengers, business, and commerce in this area.
Response	Thank you for your comments supporting the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Healy, Edward J.
Comment I-269-1	I am writing to urge New York State to consider the reuse of the Buffalo Central Terminal as a center for transportation
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.
Commenter	Hebert, Austin, D.S. Ray Middle School, D.S. Ray Middle School
Comment I-270-1	I would pick the Alternative 110, as it has the same features as the Base Alternative, 90A, and 90B with 25 miles of new track. The trains, stations, and tracks, all need to be updated. They are old and could cause accidents.
Response	Thank you for your comments supporting the 110 Alternative, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Because of the required property acquisitions, Alternative 110 would have

	significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance.
Commenter	Heint, Lucretia W.
Comment I-271-1	4 choices but 110 sounds but we need more service in Utica and Rome. Somehow we have been bypassed. Our station is unique. Don't have to build here. All of our 4 parts have more but I favor Alternative 110.
Response	Thank you for your comments about preserving and offering intercity rail passenger service for the City of Utica, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As described in the prior response, Alternative 90B would provide substantial travel time savings, but would constrain more of the additional trackage within the existing right-of-way than Alternatives 110 and 125. Alternative 125 was designed to help cut the distance between Albany and Syracuse by 14 miles, but one of the major drawbacks of this route is that it passes to the south of the stations on the current Empire Corridor in the Mohawk Valley between Syracuse and Albany. Therefore, 125 express service would not serve Rome, Utica, Amsterdam, and Schenectady. As discussed in Chapter 3 of the Tier 1 EIS, the Preferred Alternative would double the frequency of service to Utica.
Commenter	Heintzman, Michael
Comment I-272-1	As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons: -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degree programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-269-1.
Commenter	Herrling, Daniel S.
Comment I-273-1	High Speed Rail, Great Idea...If It Was 1980 A high speed rail sounds great, but the reality is that high speed rail does not mean high speed travel. Most of the proposed options only have an average speed in the mid 50 mph range. None of the travel time from NYC to Niagara Falls is really that impressive, not to mention that most of them are based on express services.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 DEIS. The Preferred Alternative, Alternative 90B, would reduce travel times between New

York City and Niagara Falls by 1 ½ hours in 2035, compared to the Base Alternative. Alternative 90B would double the service frequency along Empire Corridor West and would result in the best overall on-time performance for Amtrak service in 2035 of all of the alternatives considered.

Commenter Herrling, Daniel S.

Comment I-273-2 A high speed rail system in NY would still rely heavily on local mass transit options once a traveler gets to the local train station.

Response Thank you for your comments, relating to the accessibility of local transit as part the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. Station locations identified in the Tier 1 EIS, in most cases, provide access to the public for both public transit and automobiles.

Commenter Hill, Lauren

Comment I-274-1 The Buffalo Central Terminal is a perfect hub for the high speed rail.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-269-1.

Commenter Hillengas, Paul

Comment I-275-1 Please note my support for the proposed Livingston Ave bridge walkway to be included in plans to replace / update the current Livingston Ave railroad bridge.

Response Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge.

Commenter Hmiel, Abraham

Comment I-276-1 My comment is twofold: I would like to advocate for the adoption of the maximum-speed and projected ridership plan that uses the existing CSX right-of-way, widening the tracks to as many as would be allowable. I feel that the environmental impact of the 125-plan is too great, while the increase in speed is not worth the effect on New York's ecosystems. Further, I would advocate for the plan that services the most urban areas in central New York. Therefore, I urge the NYSDOT to adopt the 110-plan. My second comment involves the Livingston Ave Bridge between Albany and Rensselaer. I want to urge the NYSDOT and the CSX Corporation to consider a pedestrian and bike path over the Hudson river. Such a right-of-way would improve commerce and mobility of car-free people living in the Albany area and would allow people to experience the natural beauty of the Hudson River.

Response Thank you for your comments supporting the 110 Alternative, which have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Because of the required property acquisitions, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a

modest improvement in overall performance. Based on this, and resulting lower costs and impacts, Alternative 90B has been selected as the Preferred Alternative.

Regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York, please refer to the preceding response.

Commenter **Hooven, James**

Comment I-277-1 Alternative 90B with its addition of a third and fourth track and a 1:30 hour reduction in travel time from NYC to Niagara Falls seems to be the most beneficial to the citizens of New York and others who utilize the EC service. However if the \$5.58 billion dollar cost is prohibitive, then Alternative 90A is the next desirable option.

Response Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.

Commenter **Hotra, Michael**

Comment I-278-1 I would urge you to consider carefully the impact of NY state's high speed rail proposals on existing freight rail service, which provides a much needed transportation link in upstate NY.

Response Thank you for your comments on the impacts of the High Speed Rail Empire Corridor Program on freight rail service in New York State, which have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter **Howard, Patricia G.**

Comment I-279-1 I am in favor of the proposed high-speed rail in our area.

Response Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter **Huang, Jackie**

Comment I-280-1 But in order to reach the balance between costs and products, I am in favor of alternative 90B.

Response Thank you for your comments supporting the 90B Alternative, which have been considered by the FRA and NYSDOT in the selection of 90B as the Preferred Alternative.

Commenter **Huber, Roger**

Comment I-281-1 I am concerned that the proposed high speed rail corridor would negatively affect business operations.

Response Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight traffic and will reduce travel times between New York City and Niagara Falls by 1½ hours in 2035, compared to the Base Alternative. In the Tier 1 EIS, Chapters 3 and 4 discuss the positive impacts of the program. More specifically, Section 4.3, Regional Population and Employment, and Business Districts, discusses how

	the program will create employment opportunities and support the labor markets in the regions served by the improved rail service.
Commenter	Huber, Roger
Comment I-281-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. As described above, the Preferred Alternative would provide additional trackage, including large sections of dedicated third and fourth track, to better segregate passenger and freight operations. Alternative 90B would also involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. The importance of preserving and improving freight rail traffic to the economy of New York State has been an important factor in the selection of the Preferred Alternative.
Commenter	Hufnagel, Glenn
Comment I-282-1	As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons: -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.
Commenter	Hunter, Suzanne
Comment I-283-1	I'm aware that a high speed rail system from Buffalo to NYC is estimated in the area of 16 billion dollars. Well, it would be worth it!

Response	Thank you for your comments supporting the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Hunters, CS
Comment I-284-1	I am disappointed to find that Buffalo's Central Terminal is not in the High Speed Rail Plan.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-282-1.
Commenter	Hycner, Jim
Comment I-285-1	I totally agree we need to bring hi-speed rail through Buffalo. But we need a stop at the BUFFALO CENTRAL TERMINAL.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-282-1.
Commenter	Ilic, Mila
Comment I-286-1	You need to revisit option 220!! That is the ONLY option that would make a real difference for NY state economy and would offset cost and envr impact by its advantage! Do not waste money and time w/any other options!!
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. In reviewing the types of technologies to be used in providing the service, the focus was on using systems that would allow for connecting with the existing rail network, and development that was within possible funding levels and time constraints for construction. During the selection of the alternatives for review in the Tier 1 EIS, alternatives with speeds of 160 mph and 220 mph were considered but not advanced. It was determined that the range of options advanced would be those with trains operating at 90, 110 and 125 miles per hour. It was determined that operating trains at higher speeds would have greater impact on the environment, require more financial investment to construct and require more public resources to operate. Comments from the public, relating to the different service alternatives, have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.
Commenter	Inglis, Andrew A.
Comment I-287-1	I would strongly support a passenger only high speed rail line from Saratoga County to NY. The terminus for the high speed line should be located in Saratoga County
Response	Currently, the Tier 1 EIS addresses improvements to the service to be operated as part of the High Speed Rail Empire Corridor Program focused between Niagara Falls and New York City. Suggestions and recommendations by the public, for improvements to the service outside of these limits, including service extending to Saratoga Springs, have been considered by the FRA and NYSDOT in the Service Development Plan.
Commenter	Iocco, Joe

Comment I-288-1 The concept is great but the cost is not manageable. It would be best to have a dedicated line for only passenger trains.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. In selecting Alternative 90B as the Preferred Alternative for the High Speed Rail Empire Corridor Program, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail. The subsidy for the Preferred Alternative (Alternative 90B) would be \$13 per rider, which would be lower than both Alternative 125's subsidy per rider of \$14 and the Base Alternative's subsidy per rider of \$17 per rider. Chapters 5 and 6 of the Tier 1 EIS describes the costs and benefits of the program alternatives.

Commenter Isserlis, Alan

Comment I-289-1 I would love to go as fast as possible. With a greater travel connect downstate stronger economy will invigorate Upstates economy. The faster the train the greater it Impact.

Response Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. In reviewing the types of technologies to be used in providing the service, the focus was on using systems that would allow for connecting with the existing rail network, and development that was within possible funding levels and time constraints for construction. During the selection of the alternatives for review in the Tier 1 EIS, alternatives with speeds of 160 mph and 220 mph were considered but not advanced. It was determined that the range of options advanced would be those with trains operating at 90, 110 and 125 miles per hour. It was determined that operating trains at higher speeds would have greater impact on the environment, require more financial investment to construct and require more public resources to operate. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative). For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Alternative 90B would involve less right-of-way and environmental impacts than Alternatives 110 and 125. Alternative 90B would also shorten the trip from New York City to Niagara Falls by 1½ hours.

Commenter Jackson, Lynne

Comment I-290-1 Having a pedestrian and bicycle accommodations on the Livingston Street Bridge would allow me to walk and bike to Rensselaer.

Response Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge.

Commenter (No Last Name), Jacob

Comment I-291-1 All NYS high speed rail projects should include the use of the Buffalo central terminal

Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.
Commenter	Jacobs, Joshua
Comment I-292-1	As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons: -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the prior response.
Commenter	Jacobs, Shari
Comment I-293-1	To restore Central Terminal and bring the rail back would be fantastic.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-291-1.
Commenter	James, Anthony
Comment I-294-1	I fully support moving the Amtrak high-speed rail station from Depew to the Central Terminal in Buffalo.

Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-291-1. NYSDOT has implemented upgrades at the existing rail station at Buffalo-Depew to improve/rehabilitate the parking lot and enhance passenger access to comply with Americans with Disabilities Act requirements.
Commenter	Jamieson, Richard A.
Comment I-295-1	Use surface tracks for freight and an elevate "High Speed" monorail or "hyperloop" for high speed travel.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Tier 1 DEIS. In reviewing the types of technologies to be used in providing the service, the focus was on using systems that would allow for connecting with the existing rail network, and development that was within possible funding levels and time constraints for construction. During the selection of the alternatives for review in the Tier 1 EIS, alternatives with speeds of 160 mph and 220 mph were considered but not advanced. It was determined that the range of options advanced would be those with trains operating at 90, 110 and 125 miles per hour. Alternative 125 would involve construction of a viaduct on structure in places, but it would involve considerable costs and impacts (to 2,000 to 3,000 acres of land). It was determined that operating trains at higher speeds would have greater impact on the environment, require more financial investment to construct and require more public resources to operate. Comments from the public, relating to the different service alternatives, have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.
Commenter	Jamison, Ann
Comment I-296-1	Is there a plan to do a health impact statement/analysis with the Gt. Dept. Health Dr. Shah?
Response	<p>Thank you for your comments. The current regulatory review process for the program under NEPA (which also meets the requirements of New York State's SEQRA) involves preparation of a Tiered Environmental Impact Statement, and this Tier 1 EIS addresses corridor-level alternatives and identification of the Preferred Alternative for further definition and evaluation in a Tier 2 assessment.</p> <p>The environmental assessment of the impacts of the program on the passengers and residents along the Empire Corridor has included evaluation of noise and air quality as documented in the Tier 1 EIS. Section 4.19 of the Tier 1 EIS describes the air quality analysis performed, which indicates that no significant adverse air quality impacts are expected. Moreover, with the projected diversion of travelers to rail, the net annual operational benefits for the Preferred Alternative (Alternative 90B) would be roughly equivalent to eliminating the emissions associated with the energy and electricity consumption of 2,500 to 4,200 average U.S. single family homes every year. Although there are no plans to perform a Health Impact Assessment, it is anticipated that this would have a substantial beneficial effect on public health. Since Alternative 90B would involve adding tracks largely within the existing right-of-way, this would also minimize impacts to adjoining communities and neighborhoods. Individual projects, or groups of projects for the Preferred Alternative, will undergo a second evaluation (Tier 2) to further define and evaluate the impacts of those projects.</p>
Commenter	Jamison, Ann
Comment I-296-2	Please work with Mass. To get high speed to continue on to Boston 9+ hrs. is way too long ever though train more comfortable than driving to Boston.

Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. Currently, the High Speed Rail Empire Corridor Program focuses on improvements between Niagara Falls and New York City. Amtrak service to Boston is provided via the Lake Shore Limited Line. Service to Boston is currently provided by Amtrak over the CSXT's Boston Line and the Massachusetts Bay Transportation Authority's Worcester Line. Improvements on this line could be considered in the future, but requires partnering with Commonwealth of Massachusetts and these host railroads. However, the Tier 1 EIS addresses Amtrak connections regionally to other destinations (including Boston), and improvements to Empire Service will benefit travel on these regional lines. Comments from the public, for improvements to the service, have been considered by the FRA and NYSDOT in the development of the Service Development Plan.
Commenter	Jaroszewski, Tracy
Comment I-297-1	This is a great project that could only open the doors to Buffalo even wider. Our Central Terminal is the perfect Hub.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.
Commenter	Jenkins, Edward
Comment I-298-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight traffic and will reduce travel times between New York City and Niagara Falls by 1½ hours in 2035, compared to the Base Alternative. In the Tier 1 EIS, Chapters 3 and 4 discuss the positive impacts of the program. More specifically, Section 4.3, Regional Population and Employment, and Business Districts, discusses how the program will create employment opportunities and support the labor markets in the regions served by the improved rail service.
Commenter	Jenkins, Edward
Comment I-298-2	I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations. They also would impede the ability of the freight rail network to keep pace with and serve the needs of a growing upstate economy.

Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. As described above, the Preferred Alternative would provide additional trackage, including large sections of dedicated third and fourth track, to better segregate passenger and freight operations. Alternative 90B would also involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. The importance of preserving and improving freight rail traffic to the economy of New York State has been an important factor in the selection of the Preferred Alternative.
Commenter	Jenkins, Edward
Comment I-298-3	I urge the state to maintain current freight service and the capacity for growth by selecting the base alternative.
Response	Thank you for your comments on freight service operations on the Empire Corridor, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. As noted in the prior responses, the addition of dedicated third and fourth tracks along Empire Corridor where freight operations are heaviest will represent an improvement in freight operations, compared to the Base Alternative.
Commenter	Jennings, Susan Sturman, General Counsel and Senior Vice President, Conifer Realty, LLC, General Counsel and Senior Vice President, Conifer Realty, LLC
Comment I-299-1	I whole-heartedly support this project
Response	Thank you for your comments supporting the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Jesaitis, Amy
Comment I-300-1	I am writing to urge you to include a path on the Livingston Ave railroad bridge for pedestrians and bicyclists
Response	Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge .
Commenter	(No Last Name), Johnny
Comment I-301-1	It's the common sense to make central terminal the train stop because it's in the city parameter unlike depew.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-297-1.
Commenter	Johns, Christopher
Comment I-302-1	I'm in support for a high speed train from Albany to New York City.

Response	Thank you for your comments in support of the the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Johnson, Jeffrey
Comment I-303-1	Why are we trying to spend money on something that's not broken.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Johnson, Kristen
Comment I-304-1	<p>As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:</p> <ul style="list-style-type: none"> -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	<p>Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.</p>
Commenter	Johnson, William
Comment I-305-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight traffic and will reduce travel times between New York City and Niagara Falls by 1½ hours in 2035, compared to the Base Alternative. In the

Tier 1 EIS, Chapters 3 and 4 discuss the positive impacts of the program. More specifically, Section 4.3, Regional Population and Employment, and Business Districts discusses how the program will create employment opportunities and support the labor markets in the regions served by the improved rail service.

Commenter Johnson, William

Comment I-305-2 I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program. As described above, the Preferred Alternative would provide additional trackage, including large sections of dedicated third and fourth track, to better segregate passenger and freight operations. Alternative 90B would also involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. The importance of preservation and the improvement of freight rail traffic to the economy of New York State has been a critical factor in the selection of the Preferred Alternative.

Commenter Johnston, Deanna

Comment I-306-1 ultra high speed rail is not as necessary as DEPENDABLE service.

Response Thank you for your comments, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 of all of the alternatives considered. This alternative will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and would double the frequency of service along Empire Corridor West.

Commenter Jouret-Epstein, Ellen

Comment I-307-1 So you would expect that I would be totally in support of high speed rail. I am, in theory, but I am also primarily concerned for the development and protection of our more immediate area. The best way to achieve economic development, and to preserve and promote our more rural way of life here in the Hudson Valley will be to build high speed rail, but not on the existing tracks. This should be incorporated into the Thruway system with all new infrastructure.

Response Thank you for your comment on the High Speed Rail Empire Corridor Program. In developing the alignment of the different alternatives, consideration was given to those that would support the most favorable conditions for achieving the operating goals. In 125 Alternative, the New York State Thruway was followed between Albany and Schenectady. In other areas, the grades, curvature of the Thruway, and availability of additional property for the high speed rail right of way in some locations, did not support following the highway. Alternative 125 was designed to help cut the distance between Albany and Syracuse by 14 miles, but one of the major drawbacks of this route is that it passes to the south of the stations on the current Empire Corridor in the Mohawk Valley between Syracuse and Albany. Therefore, 125 express service would not serve Rome, Utica, Amsterdam, and Schenectady. Alternative 90B would largely follow the existing Empire Corridor and would involve less right-of-way and environmental impacts than Alternative 125, and was also selected for the reasons described in the prior responses.

Commenter Judd, Mark S.

Comment I-308-1 we need to go directly to 220MPH HSR,

Response Thank you for your comment on the need for trains to operate at higher speeds than being considered in the different alternatives in the Tier 1 EIS for the High Speed Rail Empire Corridor Program. During the selection of the alternatives for review in the Tier 1 EIS, alternatives with speeds of 160 mph and 220 mph were considered but not advanced, in part because they would bypass all but four of the existing stations along Empire Corridor West. Moreover, it was determined that operating trains at these higher speeds would have greater impact on the environment, require more financial investment to construct and require more public resources to operate than the Preferred Alternative. Comments from the public, relating to the different service alternatives, have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.

Commenter Judd, Mark S.

Comment I-308-2 My company, Comfort Care, takes care of elderly people and they shouldn't be driving and I don't plan on driving when I'm eighty.
on an Amtrak you keep having to ask the conductor when you need to get off. And then he's got to point where the door is: It's three cars down that way and get up maybe in fifteen minutes unless we stop again on the track.
So on a German train, let's say you're scheduled to ride to Kaiserslautern at 10:07.
at 10:06 your iPhone goes off to alert you to the fact that you're arriving at the station and now you have sixty seconds to get up and grab your luggage off the overhead compartment and walk to the door. You walk to any door, any door near you -- they all open -- and then get off.
The large train stations, like Mannheim and Frankfurt and Kaiserslautern, the train stops for a hundred and sixty seconds. And in the smaller stations, like the sizes of Newark maybe and Geneva, they would stop for sixty seconds.
They're electric trains though.

Response Thank you for your comments on improvements to the service, which have been considered in the development of the Service Development Plan for the High Speed Rail Empire Corridor Program. Operating schedules for service for the Preferred Alternative will be further refined in Tier 2 assessments.

Commenter Judd, Mark S.

Comment I-308-3 I was going to be for the 125 miles per hour. Actually, thirty years ago when I went over there I joined GESPA and I wrote Louise Slaughter a whole bunch of letters about getting 125-miles-per-hour trains here. And now here we are thirty years later deciding to put in a 125-miles-an-hour train when it should be 220.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program. During the selection of the alternatives for review in the Tier 1 EIS, alternatives with speeds of 160 mph and 220 mph were considered but not advanced. It was determined that the range of options advanced would be those with trains operating at 90, 110 and 125 miles per hour. It was also determined that operating trains at higher speeds would have greater impact on the environment, require more financial investment to construct and require more public resources to operate. It was determined that the range of options advanced would be those with trains operating at 90, 110 and 125 miles per hour. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative). Comments from the public relating to the different service alternatives have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.

Commenter Kaczynski, Jeremy M.

Comment I-309-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

- The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
- The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
- The Terminal is centrally located within a two-mile radius of city-center
- The Terminal also has secure parking facilities for up to 450 vehicles
- The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
- The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter Kahkejian, Deborah

Comment I-310-1 I would like to see high speed rail so rail passengers can travel in a timely fashion.

Response Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. Alternative 90B, the Preferred Alternative, would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would double the frequency of service on Empire Corridor West.

Commenter Kahn, Joanne, 21st Century Park on the Outer Harbor Inc., 21st Century Park on the Outer Harbor Inc.

Comment I-311-1 My vote is for the fastest connection possible between NYC and Buffalo.

Response Thank you for your comments supporting the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. In addition to improving the reliability and frequency of service, as noted in the previous response, Alternative 90B would also shorten the trip from New York City to Niagara Falls by 1½ hours.

Commenter Kaplowe, Stephen

Comment I-312-1	Please add my voice in support of pedestrian and bicycle access to and across the new bridge, when constructed. This would be a natural extension to the Mohawk-Hudson bike/Hike Trail already so popular. It would be a practical and progressive thing to do
Response	Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge .
Commenter	Karas, Alex
Comment I-313-1	I highly support the 125mph alternative.
Response	Thank you for your comment supporting the 125 Alternative, which has been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 would create a dedicated, 2-track passenger right-of-way over much of the Empire Corridor and was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).
Commenter	Kawa, Michelle
Comment I-314-1	It would be absolutely wonderful, community enhancing and a much deserved reward for the Central Terminal and all its restorations and hard work to be part of this rail project.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-309-1.
Commenter	Keady, Kathleen A., Office Manager, Gardner Plus Architects, PLLC, Office Manager, Gardner Plus Architects, PLLC
Comment I-315-1	I am in full support of this-faster trains.
Response	Thank you for comments in support of the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. In addition to improving the reliability and frequency of service, Alternative 90B would also shorten the trip from New York City to Niagara Falls by 1½ hours.
Commenter	Kerrigan, Scott
Comment I-316-1	As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons: -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center

-The Terminal also has secure parking facilities for up to 450 vehicles
 -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
 -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degree programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-309-1.

Commenter Ketola, George

Comment I-317-1 Do not build a train for which there can be no economic pay back. I do not think it can possibly be a good investment of the money proposed.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program. A report prepared by the U.S. Conference of Mayors projects that incremental speed improvements (79 to 90 mph) and more frequent service (32 roundtrips from NYC to Albany) could result in an addition of approximately 3,184 jobs in 2035 in the Capital District/Albany region alone. This report also forecasts increases in 2035 of sales output in the Capital District alone of \$357.9 million per year and increases in 2035 wages of \$158.7 million per year. Economic costs and benefits of each alternative have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. Chapters 5 and 6 of the Tier 1 EIS describe the costs and benefits of the program alternatives.

Commenter Kimball, Hubert D.

Comment I-318-1 In my opinion the only way NYS could have true and safe high speed rail is for the trains to have their own dedicated tracks not used by any other trains.
 My conclusion is that this idea will neither be safe nor economically feasible and that time and money should not be wasted on it.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail, the majority of which consists of dedicated third track. Chapters 2 and 3 address safety for the existing corridor and the program alternatives, and Chapters 5 and 6 of the Tier 1 EIS describe the costs and benefits of the program alternatives.

Commenter Kinder, Drew

Comment I-319-1 I wouldn't bother with anything other than the 125 alternative.

Response Thank you for your comment supporting the Alternative 125, which has been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).

Commenter King, Derek

Comment I-320-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

-The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.

-The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York

-The Terminal is centrally located within a two-mile radius of city-center

-The Terminal also has secure parking facilities for up to 450 vehicles

-The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development

-The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter King, Jessica

Comment I think this is a great idea!!
I-321-1

Response Thank you for your comment in support of the High Speed Rail Empire Corridor Program, which has been considered by FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter Kirkendall, Scott

Comment consider the BUFFALO CENTRAL TERMINAL IN BUFFALO NY as one of the station stops.
I-322-1

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-320-1.

Commenter Klatt, Bonnie

Comment As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:
I-323-1

-The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.

-The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York

-The Terminal is centrally located within a two-mile radius of city-center

-The Terminal also has secure parking facilities for up to 450 vehicles

-The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development

-The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degree programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-320-1.

Commenter Klepfer, Marcia

Comment I-324-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

-The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.

-The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York

-The Terminal is centrally located within a two-mile radius of city-center

-The Terminal also has secure parking facilities for up to 450 vehicles

-The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development

-The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degree programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-320-1.

Commenter Klion, Bruce

Comment I-325-1 I just want to go on record as being a strong supporter of high speed passenger rail service for NY extending to Western New York.

Response Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter Klug, Judith

Comment I-326-1 The Central Terminal in Buffalo is an important historical landmark which would benefit greatly if a High Speed Rail system were to be put in place along the New York rail corridor

Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-320-1.
Commenter	Koch, Frances
Comment I-327-1	We really need this in Buffalo so we can make use of our beautiful Central Terminal that is in process of renovations.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-320-1.
Commenter	Kompinski, CS
Comment I-328-1	If this is a 20 year project - 110 or 125MPH is 1990's technology. If we are going to invest in High Speed Rail - make it High Speed - 200+ MPH or what's the point?
Response	Thank you for your comment concerning train technologies considered in the High Speed Rail Empire Corridor Program. During the selection of the alternatives for review in the Tier 1 EIS, alternatives with speeds of 160 mph and 220 mph were considered but not advanced. It was determined that the focus would be on a range of options with trains operating at 90, 110 and 125 miles per hour. It was determined that operating trains at higher speeds would have greater impact on the environment, require more financial investment to construct and require more public resources to operate. Comments from the public, relating to the different service alternatives, have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.
Commenter	Kompinski, CS
Comment I-328-2	Leverage the existing central terminal in Buffalo as a HS rail station.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-320-1.
Commenter	Konder, George C.
Comment I-329-1	I am writing in strong support of the proposed high-speed rail system for the Empire Corridor from Albany to Niagara Falls, New York.
Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Konder, George C.
Comment I-329-2	While I would hope for the fastest speed possible, plan Alternative 125 (mph) at \$14.71 billion is also the costliest. The second fastest speed appears to be far less costly, Alternative Plan 110 (mph), at \$6.25 billion, and makes more sense financially in exchange for a reduction of only 15 mph in speed

Response	Thank you for your comments from the public, relating to either Alternative 125 or 110, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. In selecting Alternative 90B as the Preferred Alternative for the High Speed Rail Empire Corridor Program, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Kontrabecki, James
Comment I-330-1	As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons: -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-320-1.
Commenter	Koplik, Mark
Comment I-331-1	I would like to express support for adding pedestrian and bicycle access to the Livingston Avenue Bridge Replacement Project.
Response	Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website: www.dot.ny.gov/livingstonavebridge .
Commenter	Kostran, Jan
Comment I-332-1	With an affordable and viable option like high speed rail I have no doubt countless New Yorkers will take advantage of this opportunity especially if promoted wisely and aggressively. Count me among those who will.
Response	Thank you for your comments supporting the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Kozaczka, Stanley J.

Comment I-333-1	I am in favor of the 110 mph alternative.
Response	Thank you for your comments in support of Alternative 110, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Because of the required property acquisitions, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance.
Commenter	Kozaczka, Stanley J.
Comment I-333-2	new routes to serve the Southern Tier ought to be considered with trains eventually going from Syracuse to Binghamton and to Scranton and New York City.
Response	Thank you for your comment on the HSR Empire Corridor Program. The program considers improvement alternatives for the Empire Corridor between New York City and Albany and Albany to Niagara Falls. Additional routes out of this corridor are not being considered at this time as part of the program.
Commenter	Kraska, Robert
Comment I-334-1	I believe the central terminal, located in buffalo New York should definitely be in all future plans for high speed rail projects.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.
Commenter	Kratz, Josh
Comment I-335-1	I highly advise going with the full 125mph high speed rail option.
Response	Thank you for your comments supporting the 125 Alternative and the benefits from high speed rail, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).
Commenter	Krekeler, Paul
Comment I-336-1	I encourage the NYSDOT to include bike/ped access on the Livingston Ave bridge. Doing so will make crossing the Hudson River more accessible and multimodal.

Response Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website: www.dot.ny.gov/livingstonavebridge.

Commenter Kruzynski, Mari-Beth

Comment I-337-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:
 -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
 -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
 -The Terminal is centrally located within a two-mile radius of city-center
 -The Terminal also has secure parking facilities for up to 450 vehicles
 -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
 -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-334-1.

Commenter Kurtik, Edward

Comment I-338-1 There is a need for High Speed Rail to reduce travel time and high way congestion. Plans 90A,90B and 110 all have advantages, limiting factor would be funding. It would be necessary to insure that local Public Transportation would be available to transport passengers to the High Speed Rail stations.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative. In the Tier 2 assessments, individual projects or groups of projects will be further advanced in terms of costs, scheduling, and funding, according to the Service Development Plan. For station projects, opportunities for multimodal connectivity can be pursued with the local municipality and transit provider. Station locations identified in the Tier 1 EIS, in most cases, provide access to the public for both public transit and automobiles.

Commenter Kurtik, Elizabeth

Comment I-339-1 HIGH SPEED RAIL EMPIRE CORRIDOR PROGRAM High Speed Rail will enhance the economy of the United States beginning with the corridor from New York City to Niagara Falls, New York, and someday the rest of the country. The reasons for doing this are as follows :
 • Faster travel by people on business or pleasure trips should mean more decisions to go by train rather than airplane. Air travel has become cumbersome and unreliable.

- CSX and others have a stake. If freight can be moved by rail rather than by trucks, it would decrease air pollution, decrease the number of trucks on the roads, and make the roads safer.
- If people are moved by rail rather than by car, it would also decrease air pollution, mean fewer automobiles on roads, and safer roads.
- It would decrease the pounding that roads get, have a longer life and reduce costs to maintain

Response Thank you for your comments supporting the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter Kurtik, Elizabeth

Comment I-339-2 Although there are considerable cost differences among the Base Alternative and the other four proposals, the Base Alternative does not appear to accomplish the desired increase in speed. Alternatives 90A, 90B, or 110 have better cost/benefit ratio(s). Alternative 125 would be the highest speed but the cost jumps considerably high.

Response Thank you for your comments on the High Speed Rail Empire Corridor Tier 1 EIS. The return on investment for the program and other costs have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.

Commenter Kurya, Jamie

Comment I-340-1 I like the 125 alternative, would have wanted a higher option but understand cost issues.

Response Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. During the selection of the alternatives for review in the Tier 1 EIS, alternatives with speeds of 160 mph and 220 mph were considered but not advanced. It was determined that the focus would be on a range of options with trains operating at 90, 110 and 125 miles per hour. It was determined that operating trains at higher speeds would have greater impact on the environment, require more financial investment to construct and require more public resources to operate. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).

Commenter Kustyn, David M.

Comment I-341-1 I AM FAVOR HIGH SPEED RAIL.

Response Thank you for your comments supporting high speed rail, which have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter Lacari, Mark

Comment I-342-1 After reading the DEIS from the New York State DOT, it should be clear to do a 110mph Service for Amtrak.

Response Thank you for your comments in support of Alternative 110, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Because of the required property acquisitions, Alternative 110 would have significantly

	higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance.
Commenter	Lacari, Mark
Comment I-342-2	it should be in the best interest to go for the 110mph High Speed Rail Corridor Plan.
Response	Thank you for your comments relating to Alternative 110, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative, for the reasons outlined above.
Commenter	Lacari, Mark
Comment I-342-3	<p>As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:</p> <ul style="list-style-type: none"> -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-334-1.
Commenter	Lancellotti, Frank
Comment I-343-1	I think spending taxpayer money on high speed rail in N.Y. State is a waste of hard earned & scarce resources.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 EIS.
Commenter	Langner, Guenther
Comment I-344-1	Q: Grade crossings? Total avoidance joint management of signaling system CSX/Amtrak now/future? In case of the blue track (125) only between Albany/Rensselaer and NY this is ensured.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Tier 1 EIS, which have been considered in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail. Chapters 2 and 3 address safety for the existing corridor and the program alternatives.
Commenter	Langner, Guenther

Comment I-344-2	Provision of reliable local transportation to and from the railroad station as well as parking facilities (the municipalities's responsibility)
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. In the Tier 2 assessments, individual projects or groups of projects will be advanced in terms of costs, scheduling, and funding, according to the Service Development Plan. For station projects, opportunities for multimodal connectivity can be pursued with the local municipality and transit provider. Station locations identified in the Tier 1 EIS, in most cases, provide access to the public for both public transit and automobiles.
Commenter	Langner, Guenther
Comment I-344-3	Is there a convenient continuation at Niagara Falls to Ontario?
Response	Thank you for your comments on connections from Niagara Falls to Ontario. Currently, the High Speed Rail Empire Corridor Program is focused on improvements between New York City and Niagara Falls. The program will improve service that operates along Empire Corridor, including Maple Leaf service that continues into Toronto/Ontario.
Commenter	Langner, Guenther
Comment I-344-4	Choosing any of the four alternatives (base, 90A, 90B, 110) would very likely preclude that the really attractive choice 125 will ever be realized.
Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative. The Preferred Alternative, Alternative 90B, was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Langone, Louis C.
Comment I-345-1	As much as I would like to see trains and tracks capable of 150+ MPH, I can't help but wonder if it would be feasible to spend 15 or 16 billion to achieve this – and it is questionable as to whether it would bring in the projected revenue.
Response	Thank you for your comments on the alternatives being evaluated in the High Speed Rail Empire Corridor Program. During the selection of the alternatives for review in the Tier 1 EIS, alternatives with speeds of 160 mph and 220 mph were considered but not advanced. It was determined that operating trains at higher speeds would have greater impact on the environment, require more financial investment to construct and require more public resources to operate. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative). Comments from the public, relating to the different service alternatives, have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.
Commenter	Langone, Louis C.
Comment I-345-2	If we can build and maintain tracks to withstand 100-110 MPH – to me that would be a great achievement – fast enough for upstate NY. Our present locomotives are capable of this. Therefore, I favor 90A and modify Alt. 110 to reach at least 100MPH+.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the

Preferred Alternative. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Because of the required property acquisitions, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance. The Alternative 90A improvements are incorporated into the Preferred Alternative.

Commenter Lankenau, Susan

Comment I-346-1 I am in favor of Alternative 110. If those improvements are well received and ridership increases Alternative 125 could be instituted. I believe improvements need to focus FIRST on track and trains and LAST on stations.

Response Thank you for your comments in support of Alternatives 110 and 125 and the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative, for the reasons outlined above.

Commenter Lankenau, Susan

Comment I-346-2 I suggest Amtrak keep ticket prices the same during holidays and non-holidays. It is a horrible penalty to charge more for holiday travel times.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program Tier 1 EIS. Ticket revenues and ridership projections were part of the evaluation process for each of the alternatives, and details can be found in Chapters 5 and 6 and Appendix B of the Tier 1 EIS. In Tier 2 assessments, more detailed evaluations regarding the future operation of the Empire Corridor, and revenue policies can be reviewed.

Commenter Lannier, Monica, D.S. Ray Middle School, D.S. Ray Middle School

Comment I-347-1 I believe that the state of NY should invest their money in the 125mph high speed rail for the convince of the people. This rail will stop in Albany, Syracuse, Buffalo and Rochester, these or major cities will make it easier than stopping at many stops for less amounts of people.

Response Thank you for your comments supporting the 125 Alternative and the benefits from high speed rail, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).

Commenter Lasher, Ed

Comment I-348-1 a fast rail system serving this area may be what we need to keep from disappearing from the state map..

Response Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter Lashgar, Shaghafegh, D.S. Ray Middle School, D.S. Ray Middle School

Comment I-349-1 I think New York should have High Speed trains.

Response Thank you for your comments supporting the High Speed Rail Empire Corridor Program and for the need for improving rail passenger service on the route, which have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter Lautz, Ellen

Comment I-350-1	Just wanted to add one more vote for high speed rail to Central New York.
Response	Thank you for your comments supporting the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Leone, Corey
Comment I-351-1	I am all for any high speed rail project in New York.
Response	Thank you for your comments supporting the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Leppere, Barney
Comment I-352-1	Alternative 125 looks like a good rt. Thru. Central NY. We need hi speed rail service.
Response	Thank you for your comments supporting the 125 Alternative and the benefits from high speed rail, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).
Commenter	Levy, Josette
Comment I-353-1	The new High Speed Rail system should come to Buffalo, New York. We have a beautiful terminal in the process of coming back to life.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.
Commenter	Lewandowski, Karen
Comment I-354-1	This needs to happen! The Central Terminal is an iconic building that is very underutilized and just needs the support of the community and a project such as this to revitalize it and the surrounding community. I support any and all revitalization and reuse of this beautiful place.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central

Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the prior response.

Commenter Lewandowski, Nancy J.

Comment I-355-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

- The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
- The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
- The Terminal is centrally located within a two-mile radius of city-center
- The Terminal also has secure parking facilities for up to 450 vehicles
- The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
- The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-353-1.

Commenter Lezynski, Scott

Comment I-356-1 Please consider repurposing the Buffalo Central Terminal as part of the project.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-353-1.

Commenter Lindblad, K.A.

Comment I-357-1 '90A' – Limited Support (go for this if nothing else)
 '90B' – No Support.
 '110' – Full Support – Recommend rolling 90B into this.
 '125' – No Support
 1. Full support of proposal 110. Fallback position being proposal 90A.

Response Thank you for your comments in support of Alternative 110, and Alternative 90A, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Because of the required property acquisitions, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance. Alternative 90A improvements are incorporated into Alternative 90B, which will provide approximately 370 miles of additional trackage to better segregate passenger and freight

	rail. Alternative 90B will provide similar trackage as Alternative 110, only situating more of the improvements within the existing right-of-way.
Commenter	Loeser, Sara
Comment I-358-1	The Buffalo Central Terminal would be the perfect place to connect to high speed rail. Please consider it.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-353-1.
Commenter	Lofaro, Cynthia
Comment I-359-1	My vote is for the 125 mph Option.
Response	Thank you for your comments supporting the 125 Alternative and the benefits from high speed rail, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).
Commenter	LoFaso, Fred
Comment I-360-1	Any new hub if the Buffalo should be located at the Buffalo Central Terminal.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-353-1.
Commenter	Lofft, Patrick M.
Comment I-361-1	As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons: -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central

Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-353-1.

Commenter Lombardo, Rosemary

Comment I-362-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:
 -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
 -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
 -The Terminal is centrally located within a two-mile radius of city-center
 -The Terminal also has secure parking facilities for up to 450 vehicles
 -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
 -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-353-1.

Commenter Long, Joseph & Susan

Comment I-363-1 Count us in on improvement of passenger rail service in the Empire Corridor. We don't fly and use the train. Plan #110 looks good

Response Thank you for your comments in support of the High Speed Rail Empire Corridor Program and Alternative 110, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B, the Preferred Alternative, would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. Moreover, Alternative 90B would have fewer environmental impacts than Alternative 110.

Commenter Lotto, Peter

Comment I-364-1 I strongly support the Alternative 125 that would bring real speed to the trip.

Response Thank you for your comments, relating to Alternative 125, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).

Commenter Loughlin Jr., Tom

Comment I-365-1 Do not pass up the stop at the Gateway to the Adirondacks...Utica

Response Thank you for your comments about preserving and offering intercity rail passenger service for the City of Utica, which has been considered by the FRA and NYSDOT in the selection of

Alternative 90B as the Preferred Alternative. Alternative 125 was designed to help cut the distance between Albany and Syracuse by 14 miles, but one of the major drawbacks of this route is that it passes to the south of the stations on the current Empire Corridor in the Mohawk Valley between Syracuse and Albany. Therefore, 125 express service would not serve Rome, Utica, Amsterdam, and Schenectady. The Preferred Alternative, Alternative 90B, was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance. As discussed in Chapter 3 of the Tier 1 EIS, the Preferred Alternative would increase service to Utica (doubling the frequency).

Commenter Loughlin Jr., Tom

Comment I-365-2 Nice new rails, bed improvements , and a decent kick up in speed....not crazy fast ...would be great for all of the state.

Response Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.

Commenter Lum, David

Comment I-366-1 What benchmarking structure is in place, and what reports can I view regarding benchmarking efforts with other public people movement efforts?

Response Thank you for your comments on the High Speed Rail Empire Corridor. The Federal Railroad Administration maintains on their website, www.fra.dot.gov, an overview of the different high speed rail projects and initiatives they are supporting throughout the country.

Commenter Lundgren, Faith, D.S. Ray Middle School, D.S. Ray Middle School

Comment I-367-1 The option of the train going 120 mph I think would be very convenient; bringing down travel time by a lot.

Response Thank you for your comments supporting the 125 Alternative and the benefits from high speed rail, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).

Commenter Lupia, Charles

Comment I-368-1 Unlike the Erie Canal, a high-speed train will not transport freight. But my quickly moving CNY people to such cities as NY, it will provide them with economic opportunities. And sooner or later these increased connections should bring opportunities directly to Syracuse, Rochester and Buffalo.

Response Thank you for your comments supporting the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.

Commenter Macdonald, Roderick

Comment I-369-1 I will be your biggest fan of this project. I think it is a great idea on so many levels.

Response Thank you for your comments in the support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter Mackiewicz, Cheryl A.

Comment I-370-1 As a supporter and volunteer at the national landmark known as the Buffalo Central Terminal, I would like to voice my support regarding the Terminal's use for future high speed rail, known as the Empire Corridor Project- Tier I EIS. I feel that you should strongly support the inclusion of the Central Terminal facilities in the plans for this project

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter Mackiewicz, Cheryl A.

Comment I-370-2 this complex should be part of the future of the Buffalo area for the following reasons: - The Terminal is a point of interest to the tourists who visit Buffalo and New York State because of its architectural design and historical transportation legacy. - The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will create educational opportunities, an active arts center, workforce and economic development and neighborhood reinvestment in the Broadway-Fillmore district of Buffalo, New York; a neighborhood with a rich history of its own. - The Terminal is located within an easy commute to the center of the city. - The Terminal has secure parking facilities for up to 450 vehicles. - The Terminal already has a main concourse for travelers to dine and shop, and with future renovation, will add to the tourist attraction and an economic benefit for entrepreneurship and small business development. - The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies; working with marble, stained glass, and other reconstructive arts, thereby creating a benchmark for historic rehabilitation and restoration. The Terminal is a gem waiting for reuse and would be the perfect facility to incorporate in your plans for high speed rail service. am confident that New York State can promote the reuse of this original and historic building; the Terminal was built to be a center for transportation and this is her- and your- opportunity

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the prior response.

Commenter Macri, David

Comment I-371-1 Totally disagree with any of these proposals. Overlaying 'quasi high speed' rail on the existing infrastructure does not provide benefits which outweigh the costs.

Response	Thank you for your comments, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. Chapters 5 and 6 address benefits and costs of the program alternatives.
Commenter	Ziehm, Linda
Comment I-372-1	As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons: -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-370-1.
Commenter	Maderi, Denny
Comment I-373-1	I was wondering why the tube option, proposed for California for high speed rail, has not been considered as a viable options.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Tier 1 EIS. In reviewing the types of technologies to be used in providing the service, the focus was on using systems that would allow for connecting with the existing rail network, and development that was within possible funding levels and time constraints for construction. Comments from the public, relating to the different service alternatives, have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.
Commenter	Madison, Dale
Comment I-374-1	It will be spectacular if the High Speed project uses Buffalo Central Terminal
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-370-1.
Commenter	Madison, Dale
Comment I-374-2	if Alternate 125 bypasses Rome, Utica and Schenectady, does it also bypass Hudson and Rhinecliff? If upstate cities are bypassed to achieve faster through put, it's only fair to bypass downstate cities for the same reason

Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. One of the advantages of Alternative 90B is that it would double the frequency of service to these cities bypassed by Alternative 125. Communities in the Mohawk Valley (Schenectady, Amsterdam, Utica and Rome) would not be served because the route for the 125 Alternative is located south of these communities. South of Albany-Rensselaer, the 125 Alternative would have utilized the existing route, and schedules and stopping patterns for trains would have been developed further in the formulation of the Service Development Plan.
Commenter	Madison, Dale
Comment I-374-3	Reroute CSX out of downtown Rochester and onto the West Shore.
Response	Thank you for your comment regarding train operations in the City of Rochester. The HSR Program outlined in the Tier 1 EIS focuses on improvements and alternatives on or near the current alignment of the rail passenger service between Albany and Niagara Falls, New York. The Tier 1 EIS evaluates the operation of passenger and freight trains along the Empire Corridor, and the Preferred Alternative will add approximately 370 miles of additional trackage, including third and fourth tracks in Rochester, to better segregate passenger and freight rail. Specific projects for the Preferred Alternative will undergo a second evaluation (Tier 2) to further advance design for that project, or group of projects.
Commenter	Madison, Dale
Comment I-374-4	As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons: -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-370-1.
Commenter	Malecki, Joanne
Comment I-375-1	Please insure that any and all bridge alterations, rebuilds, and/or construction projects include safe walk and bikeways across them.
Response	Thank you for your comments concerning the consideration of bicycles and pedestrians in the High Speed Rail evaluation process. Comments from the public, relating to the

accessibility for bicycles and pedestrians, have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. Any projects resulting from the Preferred Alternative will undergo a second evaluation (Tier 2), and bicycle and pedestrian accommodations can be further evaluated at that time.

Commenter **Malone, Evelyn**

Comment I-376-1 Such a perfect idea to use this beautiful building to begin to build that area of Buffalo. I would love to ride a train from that station again. Hope the State will be wise enough to grab onto this idea and facility.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter **Mandanas, Linda**

Comment I-377-1 option 110 makes the most sense to me, best balance between costs and benefits

Response Thank you for your comments in support of Alternative 110, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Because of the required property acquisitions, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance.

Commenter **Mantell, Amy**

Comment I-378-1 I support bringing high speed rail to the Empire Corridor and believe it is well worth the investment.

Response Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.

Commenter **Marcus, Aaron**

Comment I-379-1 I live in Vermont, and it is very challenging to get from Vermont to Central and Western New York, ever since Greyhound cut routes about 10 years ago. Improvements to extend the Ethan Allen to Burlington are in sight, but I would really like to see greatly improved on-time performance and frequency of trips, so that it will be easier to transfer to and from Vermont trains in Albany/Schenectady.

Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. The Preferred Alternative will improve service along the Empire Corridor, and improvements to Empire Service will benefit travel on connecting regional lines, including connecting trains to Vermont (Ethan Allen Express). The Tier 1 EIS addresses Amtrak connections regionally to other destinations (including Rutland).
Commenter	Marcus, Aaron
Comment I-379-2	Please take the most ambitious alternative fiscally possible, and ridership from Vermonters like me – as well as many Vermont tourists – will follow. I will ride New York trains much more, with a dedicated passenger rail corridor.
Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Markiewicz, Jacob
Comment I-380-1	The attached editorial dated November 20, 2008 was at the time, what I thought was a good idea. People with other personal agendas put the idea down. Today it's even a better idea. My problem is people are currently talking about this and making people believe it is a new idea and for another area. This should be here in Lake Katrine and Kingston!
Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. The Tier 1 EIS presents the planning and alternatives analysis that culminated in selection of Alternative 90B as the Preferred Alternative.
Commenter	Martin, April
Comment I-381-1	As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons: -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-376-1.
Commenter	Martin, Ben, Communication Manager , CURE International, Communication Manager, CURE International
Comment I-382-1	I am very much in favor of extending high speed service through the Empire Corridor and encourage any efforts to that end.

Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Martin, Sharon
Comment I-383-1	<p>As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:</p> <ul style="list-style-type: none"> -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-376-1.
Commenter	Mathieu, Richard
Comment I-384-1	The Livingston Avenue Bridge Walkway is a critical connection that can be built safely and cost effectively.
Response	<p>Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge.</p>
Commenter	Mathner, Susan
Comment I-385-1	<p>As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:</p> <ul style="list-style-type: none"> -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles

-The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
 -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-376-1.

Commenter Maurer, Maggie

Comment I-386-1 This would benefit the area greatly and my quality of life! Bravo!

Response Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter Maurer, Maggie

Comment I-386-2 I would use a high speed rail system.

Response Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter McFarland, Jay

Comment I-387-1 I'd like the high speed rail to have some food service on the train and so they have at least coffee and doughnuts, and then if we have wine and beer from New York State right on the trains, hopefully we'll be able to encourage the people to come on the trains and enjoy them,

Response Thank you for your comments relating to amenities on trains operated in the future. The Tier 1 EIS addresses improvements to the Empire Corridor rail system focusing on train operations and performance. These food and beverage services are provided by the service operator (currently Amtrak). Further definition of the Operating Plan and amenities can be performed in the Tier 2 assessments.

Commenter Maziarczyk, Michael

Comment I-388-1 As a supporter of the National Landmark known as the Buffalo Central Terminal, I would like to take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project ? Tier I EIS.
 This Historic Building should not be forgotten but instead re-used for a valid project.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city

officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter Mazura, Christopher

Comment I ask you to prioritize the reestablishment of a bike corridor between Rensselaer and Albany over the replacement Livingston Avenue Bridge.

Response Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge.

Commenter McColl, William

Comment Get going on 110 right now.

Response Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in selecting Alternative 90B as the Preferred Alternative. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Because of the required property acquisitions, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance.

Commenter McColl, William

Comment Start surveys and possible land acquisitions for 125 ROW.

Response Thank you for your comments, relating to Alternative 125, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).

Commenter McColl, William

Comment Infrastructure project are good for the economy, after maintenance, or course.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter McElduff, Kelsey

Comment Construction of new tracks for "high-speed" trains that don't support high-speed technologies such as magnetic levitation will make it more difficult to construct these tracks for bullet trains when reduction of fossil fuel use becomes crucial in the future

Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. In developing the alternatives in the Tier 1 EIS for the High Speed Rail Empire Corridor Program, very high speed (VHS) alternatives and alternative technologies were considered, but were not selected in part because they were considered to be cost-prohibitive. In selecting the Preferred Alternative for the High Speed Rail Empire Corridor Program, the FRA and NYSDOT focused on technology that allows connections with other parts of the national rail network.
Commenter	McElduff, Kelsey
Comment I-391-2	Also, the two rejected proposals that operated at much higher speeds were claimed to have more negative environmental impacts. I find this hard to believe with the long-term energy savings that come from operating trains at much higher speeds.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. During the selection of the alternatives for review in the Tier 1 EIS, it was determined that the focus would be on a range of options with trains operating at 90, 110 and 125 miles per hour. It was also determined that operating trains at higher speeds would have greater impact on the environment, require more financial investment to construct and require more public resources to operate.
Commenter	McElduff, Kelsey
Comment I-391-3	I just want to reiterate what these two gentlemen said about this not really being high speed technically and I just wanted to make a comment that if you already have corridors that you can build on potentially, new corridors on the west, then I would suggest saving those corridors for Maglev trains, instead of constructing the same tracks that we have already and then making it harder to develop in the future faster bullet trains that we are eventually going to need.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. In selecting the Preferred Alternative, the FRA and NYSDOT focused on railroad technology discussed in the Tier 1 EIS that allows connections with other parts of the national rail network, as discussed in the preceding responses.
Commenter	McLaughlin, David
Comment I-392-1	When it comes to the proposed HIGH SPEED RAIL EMPIRE CORRIDOR PROGRAM, I am very opposed to using money that could go to repair roads and bridges used by far more travelers, transit of goods or commuters to employment.
Response	Comments from the public of the High Speed Rail Empire Corridor Program have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 EIS.
Commenter	McLeod, Caitlin
Comment I-393-1	As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons: -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles

-The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
 -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-388-1.

Commenter **McMahon, Thomas J.**

Comment I urge you to include the old Central Terminal in Buffalo as the Western New York terminus/station on the high-speed rail link.
 I-394-1

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-388-1.

Commenter **McNally, Megan**

Comment As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:
 I-395-1
 -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
 -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
 -The Terminal is centrally located within a two-mile radius of city-center
 -The Terminal also has secure parking facilities for up to 450 vehicles
 -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
 -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-388-1.

Commenter **Mead, Jeffrey**

Comment quicker service can be obtained by expanding track capacity to lessen congestion issues and incremental top speed increases of the trains themselves up to 90-110 mph.
 I-396-1

Response Thank you for your comments on the High Speed Rail Empire Corridor Program. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-

	minutes per 100 train miles operated for freight trains of all of the alternatives considered. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 of all of the alternatives considered
Commenter	Meara, Thomas
Comment I-397-1	I would be a more frequent user of passenger rail if it would be more frequent and more timely. No need for high rail,
Response	Thank you for your comments on the program, which have been considered in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and would improve the frequency of service along Empire Corridor West.
Commenter	Merriman, Leigh
Comment I-398-1	I think high speed train travel on tracks dedicated only to passenger trains would be wonderful. I support the concept of high speed train travel in New York State.
Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT. In selecting the Preferred Alternative, which will add additional third and fourth tracks to segregate passenger and freight rail, the focus was on railroad technology discussed in the Tier 1 EIS.
Commenter	Merzbach, Ralph K., Attorney, Merzbach Law Office, P.C., Attorney, Merzbach Law Office, P.C.
Comment I-399-1	I strongly support high speed rail – the faster the better. Let's get moving with Alternative 125 and make reliable and sensible rail transport a reality in this state. The cost is fine with me.
Response	Thank you for your comments supporting the High Speed Rail Empire Corridor Program and the need for improving rail passenger service on the route, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).
Commenter	Messere, Fritz
Comment I-400-1	1. To make trains a reliable alternative to air, cost, frequency and times are important considerations. Currently it is not possible to catch a train after 5PM in Syracuse. This is not possible to work for the day in Syracuse and then catch a train to NYC that evening. The same is true if one wants to spend the day in NYC and return to Syracuse in the evening.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered in the development of the Service Development Plan for the High Speed Rail Empire Corridor Program. Operating schedules and timetables will be refined in the Tier 2 assessments.
Commenter	Messere, Fritz
Comment I-400-2	2. Speed is an important consideration. Residents in NYC are more likely to consider spending the a weekend upstate if the necessary infrastructure is available and the time factor is short. So, if I can get to the Adirondacks or Wine Country easily, then weekend excursions are more likely
Response	Thank you for your comments, which have been considered by the FRA and NYSDOT in selecting the Preferred Alternative for the High Speed Rail Empire Corridor Program. The Preferred Alternative will improve service along the Empire Corridor, and improvements to

	Empire Service will benefit travel on connecting regional lines, including connecting trains to the Adirondacks (Adirondack Line).
Commenter	Messere, Fritz
Comment I-400-3	3. Upstate medical specialties (Roswell in Buffalo, Children's hospital – Syracuse) could be attractive centers for treatment if there is fast, frequent service.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in selecting the Preferred Alternative.
Commenter	Mietlicki, James F.
Comment I-401-1	I would first voice full support for the highest available option for the Empire Corridor passenger rail, that being a dedicated high speed passenger line.
Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Mietlicki, James F.
Comment I-401-2	I would accordingly urge that it is appropriate that the recent resolution of the Buffalo Common Council favoring the reuse of the Buffalo Central Terminal as the high speed passenger rail facility for the area be given full effect in the plan.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-395-1
Commenter	Mietlicki, James F.
Comment I-401-3	Dedicated high speed rail for the Empire Corridor is essential for the ultimate revitalization and growth of the State, in providing efficient and effective transportation between Buffalo-Niagara NYC, and the major populations centers of Rochester, Syracuse and Albany in between, plus the potential of ultimate connection to Hamilton and Toronto.
Response	Thank you for your comments supporting the High Speed Rail Empire Corridor Program and for the need for improving rail passenger service on the route, which been considered by the FRA and NYSDOT in the selection of the Preferred Alternative. The Preferred Alternative will improve service along the Empire Corridor, and improvements to Empire Service will benefit travel on connecting regional lines, including connecting trains to destinations such as Toronto and Hamilton (Maple Leaf Line).
Commenter	Mietlicki, James F.
Comment I-401-4	I would express full support for implementation of the reuse of the Buffalo Central Terminal as high speed rail center for the Buffalo area.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-395-1.
Commenter	Mignogna, James E.

Comment I-402-1	Your ambition to bring high speed rail along this corridor is way too expensive for the benefits it would provide.
Response	Thank you for your comments on of the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 EIS.
Commenter	Miller, Chey
Comment I-403-1	There is no reason to pursue high speed rail in the Empire Corridor; that we can't afford it is good reason not to.
Response	Thank you for your comments on High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 EIS.
Commenter	Miller, Chey
Comment I-403-2	CSX rules in New York require that the new high-speed rail track be separated by at least thirty feet from freight tracks. This will undoubtedly create instances in which the state will invoke costly eminent domain.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Because of the required property acquisition outlined in your comment, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance.
Commenter	Miller, Chey
Comment I-403-3	Cost outweighs benefits. In his NY Times article "Running the Numbers on High Speed Trains," Harvard economics professor Edward Glaeser examined cost to benefits. Constructing a hypothetical rail link and plugging in a range of assumptions, he found that costs outweighed benefits in every case. He was forced to conclude, "This is the cruel arithmetic faced by people, like myself, who would love to be pro-rail."
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. A report prepared by the U.S. Conference of Mayors projects that incremental speed improvements (79 to 90 mph) and more frequent service (32 roundtrips from NYC to Albany) could result in an addition of approximately 3,184 jobs in 2035 in the Capital District/Albany region alone. This report also forecasts increases in 2035 of sales output in the Capital District alone of \$357.9 million per year and increases in 2035 wages of \$158.7 million per year. Economic costs and benefits of each alternative have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. Chapters 5 and 6 of the Tier 1 EIS describe the costs and benefits of the program alternatives.
Commenter	Miller, Chey
Comment I-403-4	The state is failing to maintain the present transportation system, according to the November 2010 report by then-Lieutenant Governor Richard Ravitch. "New York State currently lacks the revenues necessary to maintain its transportation system in a state of good repair, and the State has no credible strategy for meeting future needs. Simply maintaining the State's existing physical assets will take billions of dollars annually."
Response	Thank you for your comments on the Empire Corridor Program. In developing the program, the program cost and public investment have been considered by the FRA and NYSDOT as part of the selection of the Preferred Alternative.

Commenter	Miller, Chey
Comment I-403-5	Amtrack fares do not cover operating costs. In 2010, Northeastern Amtrak was subsidized between \$32 and \$84 per passenger in its short-distance corridors, it still lost \$1.1 billion in 2008. (Incidentally, the top speed of the proposed high-speed rail line in NY will be 110 mph, and the average speed will be considerably less. Top speed now is 89 mph; billions and billions of dollars for an increase of...31 mph. Does that make any sense?)
Response	Thank you for your comments. Economic costs and benefits of each alternative for the High Speed Rail Empire Corridor Program have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. Alternative 90B, the Preferred Alternative, would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would double the frequency of service on Empire Corridor West. Alternative 90B would also involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. Chapters 5 and 6 of the Tier 1 EIS describe the costs and benefits of the program alternatives.
Commenter	Miller, Chey
Comment I-403-6	Most of the jobs created by the high speed rail project would be union jobs; as Transportation Communications International President Bob Scardelletti boasted in 2010, "No industry is more closely tied to politics than the railroad industry." Draw your own conclusions.
Response	Thank you for your comment concerning job creation for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Miller, Chey
Comment I-403-7	Jobs created by make-work projects deprive the individual taxpayer of the right to use his earnings in a way that makes the best sense for him. The state legislature couldn't possibly know more about how I should use my own money than I do.
Response	Thank you for your comments, which have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 EIS.
Commenter	Miller, Chey
Comment I-403-8	For all these reasons, I urge that the proposal for Empire Corridor High Speed Rail Service be scuttled.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 EIS.
Commenter	Miller, Douglas
Comment I-404-1	I am against the pursuit of high speed rail in New York. I think the money would be better spent on maintenance of existing infrastructure.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 EIS.
Commenter	Miller, Henry T.
Comment I-405-1	This seems like a tremendous waste of taxpayer (MY) money yet.

Response	Thank you for your comment on the High Speed Rail Empire Corridor Program, which has been considered by the FRA and NYSDOT as part of the review process of the Tier 1 EIS.
Commenter	Miller, Michael J.
Comment I-406-1	<p>As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:</p> <ul style="list-style-type: none"> -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	<p>Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.</p>
Commenter	Miller, Phillip
Comment I-407-1	I think NYS should seriously consider Buffalo Central Terminal for a high speed rail stop.
Response	<p>Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the prior response.</p>
Commenter	Miller, Ted
Comment I-408-1	<p>Many times, automobile travel is a last resort. We can change that. Although 110 mph is not much compared with TGV scheduling 220 mph trains, it is a start. We need dedicated right of way and an approach that would place new stations outside city centers.</p>

Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and support for Alternative 110, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. During the selection of the alternatives for review in the Tier 1 EIS, alternatives with speeds of 160 mph and 220 mph were considered but not advanced. It was determined that the focus would be on a range of options with trains operating at 90, 110 and 125 miles per hour. It was determined that operating trains at higher speeds would have greater impact on the environment, require more financial investment to construct and require more public resources to operate. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Alternative 90B would involve less right-of-way and environmental impacts than Alternatives 110 and 125.
Commenter	Miller, Ted
Comment I-408-2	How about a real study of where new rail line right of way could be placed. And while we're at it, let's update the Empire Corridor rolling stock with some new train sets capable of at least 1978 British 125 mph capability!
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. The Tier 1 EIS evaluates the range of alternatives to optimize rail operations along the Empire Corridor. The Preferred Alternative will add approximately 370 miles of additional trackage largely within the existing right-of-way to better segregate passenger and freight rail. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).
Commenter	Miller, Ted
Comment I-408-3	Obviously, I'm in favor of better Empire Corridor passenger rail service and "high" speed rail.
Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Moden, Karen
Comment I-409-1	Buffalo's beautiful and historic Central Terminal is the best choice, by far, for the Empire Corridor Project. Gorgeous, existing landmark building and central location...a no brainer!
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-406-1.
Commenter	Moll, William
Comment I-410-1	I support option 90B of the NY State High Speed Rail proposal, with the following comments.
Response	Thank you for your comments supporting the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.
Commenter	Moll, William

Comment
I-410-2

I have been employed in the rail industry for over 30 years in both freight and passenger capacities, primarily in the transportation / operating departments. About 98% of my time in this industry has been right in New York State as an employee of 4 different railroads, two of which are considered Class 1 carriers, one was a regional carrier and another was a passenger carrier. I am very familiar with the operations of freight and passenger traffic on the Empire Corridor and have, at one time or another, been a train dispatcher on this Corridor from north of Poughkeepsie to Niagara Falls. I support the addition of a third main track. However, I suggest the following. All but one of the passenger stations between CP-169 (Hoffmans, NY) and Buffalo - Depew are located on the south side of the current CSX main tracks (with the exception of Amsterdam) and the major freight yards are all located on the north side of the main tracks. My suggestion is to construct a third main track north of the current track 1 to maximum 79 mph for passenger / 60 mph freight. THEN upgrade the current Track 2 to 90 mph speeds and have the southern most track in this Corridor be the primary passenger track. Using this method would allow CSX and Amtrak to continue their normal course of business during the construction phase and minimize single track operations which cause tremendous traffic backups hindering both freight and passenger operations.

Response

Thank you for your comments on track locations. For Alternative 90B, the new passenger tracks along Empire Corridor West would generally be located on the north side. The line historically operated as a four-track system, and, as part of cost-saving measures that started in the late 1950s, the two tracks that formerly existed on the north side were either removed or converted to sidings to save on maintenance. The new passenger tracks would be added in the former locations of these two tracks.

The primary factors for installing tracks on the north side include the ability to upgrade existing sidings in place to become the third and fourth tracks. The current tracks in operation are on the south side of the right-of-way, and there is availability of right-of-way on the north where this area previously had tracks in operation. Supporting track arrangements and operating diagrams were developed for each of the alternatives in the Tier 1 EIS. The locations for the additional trackage are outlined in Exhibit 3-6 in Tier 1 EIS for the High Speed Rail Empire Corridor Program, and Appendix A presents track schematics. Individual projects, or groups of projects arising out of the Preferred Alternative, will undergo a second evaluation (called Tier 2) to advance the design for that project, or group of projects.

Commenter Moll, William

Comment
I-410-3

About 10 years ago, I was asked by my employer to come up with a list of project I deemed useful for both freight and passenger operations on this corridor. This list was given to NY State but to date, I have not seen any changes made.

Response

Thank you for your comments on the program, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. The component projects included in Alternative 90B will undergo further evaluation to advance the designs as part of Tier 2 assessments.

Commenter Moll, William

Comment
I-410-4

Add an automatic signal just west of the Utica station where former CP-237 was located until it was removed after a derailment in 1992. Currently, there is a 4 mile block between CP-235 and CP-239 which creates traffic congestion as the next automatic signal east of CP-235 is signal 231, again a long block. Signal spacing is critical to minimize traffic flow problems.

Response

Thank you for your comments. The Preferred Alternative incorporates recommendations from railroad professionals to improve operations along the Empire Corridor and upgrade the infrastructure, which have been evaluated in the Tier 1 EIS for their contribution to

	improving passenger train operations along the route. Individual projects, or groups of projects arising out of the preferred alternative, will undergo a second evaluation (called Tier 2) to further advance the designs for that project, or group of projects.
Commenter	Moll, William
Comment I-410-5	Between CP-286 and CP-290 in Syracuse - Track 7 needs the signal system upgraded to permit bi-directional signaling. Currently it is signaled for westbound moves only. Speeds need to be upgraded on this track to equal what the speeds are on the adjacent Tk 1 and Tk 2 main tracks. Track 8, on the north side of Tk 1 in this same location needs to be signaled and speeds raised.
Response	Thank you for your comments on improvements to Syracuse. Currently, the FRA, NYSDOT, CSX Transportation, and Amtrak are supporting a project, Syracuse Track Configuration and Signal Improvements, that will improve operations throughout this area and create a four track railroad between East Syracuse and the passenger station at CP 290.
Commenter	Moll, William
Comment I-410-6	Bi-directional signals need to be added between CP-8 and CP-17 on the Niagara Branch located between Buffalo and Niagara Falls.
Response	Thank you for your comments. The Preferred Alternative incorporates recommendations from railroad professionals to improve operations along the Empire Corridor and upgrade the infrastructure, which have been evaluated in the Tier 1 EIS for their contribution to improving passenger train operations along the route.
Commenter	Moll, William
Comment I-410-7	Additional trackage needs to be added in the Syracuse, NY area to minimize the congestion in the DeWitt Yard area on the main tracks.
Response	Thank you for your comments for improvements to Syracuse. Currently, the FRA, NYSDOT, CSX Transportation and Amtrak are supporting a project, Syracuse Track Configuration and Signal Improvements, that will improve operations throughout this area and create a four track railroad between East Syracuse and the passenger station at CP 290.
Commenter	Mooney, Mike
Comment I-411-1	High Speed Rail What are we wanting for on this high speed rail. It should have been put in place 20 years ago. Let do it.
Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Moore, Greg D., CEO, QuiCR, CEO, QuiCR
Comment I-412-1	I echo Mr. Robinson's thoughts on the current proposals reeking of false advertising. They're higher speed rail, but hardly worthy of note. And many sections ALB-BUF should be exploring not 90mph, or even 110mph, but 150mph or 2200mph service. THAT is high speed rail.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. During the selection of the alternatives for review in the Tier 1 EIS, alternatives with speeds of 160 mph and 220 mph were considered but not advanced. It was determined that the focus would be on a range of options, with trains operating at 90, 110 and 125 miles per hour. It was also determined that operating trains at higher speeds would have greater impact on the environment, require more financial investment to construct and require more public

	resources to operate. Comments from the public, relating to the different service alternatives, have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.
Commenter	Moore, Greg D., CEO, QuiCR, CEO, QuiCR
Comment I-412-2	Of course the ultimate solution is to extend catenary north so that this section can become a true extension of the NEC much like the Keystone Service to Harrisburg is.
Response	Thank you for your comments on electrification strategies. In selecting Alternative 90B as the Preferred Alternative for the High Speed Rail Empire Corridor Program, the FRA and NYSDOT focused on technology in the Tier 1 EIS that is compatible with, and will allow connections with, other parts of the national rail network.
Commenter	Moore, Richard
Comment I-413-1	<p>As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:</p> <ul style="list-style-type: none"> -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.
Commenter	Moore, Scott
Comment I-414-1	<p>As a supporter of high-speed rail, I would love to see Buffalo's Central Terminal reused as a station again.</p> <p>As an architectural gem, it would be a point of pride for Buffalo to see this station back in use for its original purpose. It's location, right along the eastern edge of the city, makes it a convenient spot to bring in trains and send them in different directions without interfering with existing street layouts.</p>

Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the prior response.
Commenter	Moretta, Justin
Comment I-415-1	Buffalo central terminal must be included in these plans.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-413-1.
Commenter	Morgan, Richard
Comment I-416-1	My vote is for the 125 MPH rail Keep the stations to a minimum- Buff, Rochester, Syr,Utica, Maybe Gloversville, Albany and a couple thru the Hudson River area. If you have too many you'll never get to NYC in a reasonable amount of time.
Response	Thank you for your comments from the public, relating to Alternative 125, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 would have bypassed stations along the Mohawk Valley, including Rome, Utica, Amsterdam, and Schenectady. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).
Commenter	Morris, Andy
Comment I-417-1	I'm writing to urge the incorporation of bicycle/pedestrian access to the repair/replacement of the Livingston Avenue Bridge in Albany.
Response	Thank you for your comments regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge .
Commenter	Morris, Fallon, D.S. Ray Middle School, D.S. Ray Middle School
Comment I-418-1	I believe that the state of New York should spend their money on the 125 mph High Speed Rail that would stop in all the major cities like Rochester, Albany, Syracuse, and Buffalo for the convenience of their civilian's.
Response	Thank you for your comments in support of Alternative 125, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).
Commenter	Mortensen, Annette

Comment I-419-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:
 -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
 -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
 -The Terminal is centrally located within a two-mile radius of city-center
 -The Terminal also has secure parking facilities for up to 450 vehicles
 -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
 -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-413-1.

Commenter Mount, Lee and Elaine

Comment I-420-1 We think that having on time rail service to NYC from Syracuse would be wonderful. Having a track dedicated to passenger service would eliminate the frequent slowing or stops due to freight priority rail usage. It would seem that 110 mile-per-hour would be the best idea.

Response Thank you for your comments in support of Alternative 110 and the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in selecting Alternative 90B as the Preferred Alternative. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Because of the required property acquisitions, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance.

Commenter Mount, Timothy

Comment I-421-1 I support alternative 110. Although I would love to see faster times, alternative 125 does not seem cost effective.

Response Thank you for your comments supporting the 110 Alternative, which have been considered in the selection of Alternative 90B as the Preferred Alternative by the FRA and NYSDOT, for the reasons outlined in the preceding response.

Commenter Murphy, Daniel

Comment I-422-1 I am writing to request that the design and construction of the Livingston Ave Bridge, connecting Albany to Rensselaer, include access for pedestrians and bicycles.

Response Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The

Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge.

Commenter **Murphy, John J.**

Comment I-423-1 I feel that the high speed rail in NY State is one of the dumbest things ever.

Response Thank you for your comments, relating to the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter **Namynanik, Mike**

Comment I-424-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

- The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
- The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
- The Terminal is centrally located within a two-mile radius of city-center
- The Terminal also has secure parking facilities for up to 450 vehicles
- The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
- The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-413-1.

Commenter **Nardone, Candice**

Comment I-425-1 Good ideas, update upstate New York. Alt 110 you have to update track 2035 is a long way away. New jobs more business to New York. We should spend the xtra money to improve New York.

Response Thank you for your comments in support of Alternative 110 and the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in selecting Alternative 90B as the Preferred Alternative. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Because of the required property acquisitions, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance.

Commenter **Nassimos, Joe**

Comment I-426-1	I like the idea of High-Speed rail service for Upstate NY, but I think the idea should be kicked up a notch to something more 21st Century style. I suggest Monorail service through Upstate NY from Albany to Buffalo.
Response	Thank you for your comments on the High Speed Rail Empire Corridor. In reviewing the types of technologies to be used in providing the service, the focus was on using systems that would allow for connecting with the existing rail network, and development that was within possible funding levels and time constraints for construction. During the selection of the alternatives for review in the Tier 1 EIS, alternatives with speeds of 160 mph and 220 mph were considered but not advanced. It was determined that the range of options advanced would be those with trains operating at 90, 110 and 125 miles per hour. Alternative 125 would involve construction of a viaduct on structure in places, but it would involve considerable costs and impacts (to 2,000 to 3,000 acres of land). It was determined that operating trains at higher speeds would have greater impact on the environment, require more financial investment to construct and require more public resources to operate. Comments from the public, relating to the different service alternatives, have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.
Commenter	Nedwick, Darlene
Comment I-427-1	I am definitely in favor of high speed rail transportation between Western NY and New York City.
Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Neffke, Ronald E.
Comment I-428-1	High speed Rail Service is long overdue;
Response	Thank you for your comments supporting the High Speed Rail Empire Corridor Program and for the need for improving rail passenger service on the route, which have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Neish, Devon, D.S. Ray Middle School, D.S. Ray Middle School
Comment I-429-1	I believe that Alternative 90A would be the best way because of the cheaper cost of the train. Also it would be the best because of how many times the train would be at the station and how fast it goes.
Response	Thank you for your comments in support of Alternative 90A, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will improve the service frequency along Empire Corridor West. The Alternative 90A improvements are incorporated into the Preferred Alternative.
Commenter	Nerode, Nathaneal
Comment I-430-1	The Base Alternative is unacceptable; I support any of the alternatives except the Base Alternative, but I would prefer the 110 alternative
Response	Thank you for your comments in support of Alternative 110, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property.

	Because of the required property acquisitions, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance.
Commenter	Nerode, Nathaneal
Comment I-430-2	The ridership and revenue estimates are too low. It appears that the ridership estimation method assumes that ridership for upstate stations comes only from the surrounding metropolitan areas. This is incorrect. In fact, stations such as Syracuse have passengers who drive from Ithaca (such as myself) or Kingston (I have witnessed this several times) in order to catch trains at the nearest train station.
Response	Thank you for your comments regarding the ridership estimates used in the Tier 1 EIS, which points out that many of the passengers using intercity passenger trains along the Empire Corridor originate beyond the communities where the stations are located. In developing the model used to forecast ridership, the New York City Metropolitan area was deemed an important source of ridership, as many of the riders on the route have their trips linked to either a destination or origination at Penn Station in New York City. The ridership forecast model is based on statewide socioeconomic data and factored in the probability of the passengers from beyond the metropolitan area using the improved rail service. The methodology of the study and the structure of the ridership model, presented in Appendix B, Ridership and Revenue Forecasting, is consistent with the purpose and need of the Tier 1 EIS. The ridership estimates are in line with the different variables being factored into the model.
Commenter	Nerode, Nathaneal
Comment I-430-3	The ridership and revenue study appears not to have considered the ridership from people driving from these more distant points to the upstate train stations.
Response	Thank you for your comments. The methodology for the forecasting is presented in Appendix B, Ridership and Revenue Forecasting. This modeling effort incorporated travel inputs that included automobile travel and major market areas.
Commenter	Nerode, Nathaneal
Comment I-430-4	All designs should include passive provision for future electrification with overhead wires. As a result, what *does* make sense is to do all design to allow for future hanging of overhead wires: this determines overhead clearance of rebuilt bridges or tunnels, spacing between tracks (to allow for poles to carry the overhead wires), design of station platforms (to allow for poles to carry the overhead wires), etc. These passive provisions for overhead electrification should be required as an aspect of all projects built under the auspices of this DEIS. Accordingly, all alternatives except the base alternatives should include, at a conceptual level, passive provision for future overhead electrification at the current world standard of 25kV 60Hz. Unfortunately there is no mention of such provision in the DEIS.
Response	Thank you for your comments concerning electrification strategies on the Empire Corridor. The Tier 1 EIS discusses the types of energy used for trains in Section 4.20. One of the alternatives dismissed from further consideration in the Tier 1 FEIS, Alternative 125, would provide for electric trains between Albany and Buffalo. The Preferred Alternative, Alternative 90B, was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance.
Commenter	Nerode, Nathaneal
Comment I-430-5	I support the 110 option because it benefits all the trains running on the corridor at once. But the really important thing is the trains have to run on time.

Response	Thank you for your comments in support of Alternative 110, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Newton, Theresa
Comment I-431-1	Please continue work on this project.
Response	Thank you for your comments supporting high speed rail, which have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	(No Last Name), Nico
Comment I-432-1	I wonder how this will be paid for, and once the project is completed how will it continue to pay for itself?
Response	Thank you for your comment regarding economic sustainability. Economic costs and benefits of each alternative for the High Speed Rail Empire Corridor Program have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. Chapters 5 and 6 of the Tier 1 EIS describes the costs and benefits of the program alternatives.
Commenter	Nicolaysen, Bryan
Comment I-433-1	My personal opinion is that the railroad is a good idea but the cheapest option is the one that should be done. The difference between \$290 million and \$14.7 trillion is huge.
Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Of the three higher speed Build Alternatives (90B, 110 mph and 125 mph) evaluated in the Tier 1 EIS, Alternative 90B would involve the lowest cost (less than half the cost of the most expensive alternative for 125 mph service), while providing the best overall on-time performance and the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Nicolaysen, Bryan
Comment I-433-2	Do you really believe your estimates are correct? So you believe it will be safe for the passengers? Have the tests been completed? I am also not completely for this proposal for the fact that there are other things that the money can be spent on.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 EIS.
Commenter	Nielson, Eric
Comment I-434-1	I feel that this endeavor will bring a positive impact to the entire state.
Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter	Nimphius, Donald J.
Comment I-435-1	My understanding is that 110 MPH is the top speed for Class 5 track. Why is the 110 MPH goal not determined by track class? 110 MPH, I believe the top speed for Class 5 track, as a result a determination of a ceiling of 110 may not be as safe as a higher class 6 track would not only provide for safer and higher speed.
Response	Thank you for your comments on the alternatives being evaluated in the High Speed Rail Empire Corridor Program. During the selection of the alternatives for review in the Tier 1 EIS, alternatives with speeds of 160 mph and 220 mph were considered but not advanced. It was determined that the range of options advanced would be those with trains operating at 90, 110 and 125 miles per hour. It was determined that operating trains at higher speeds would have greater impact on the environment, require more financial investment to construct and require more public resources to operate. Comments from the public, relating to the different service alternatives, have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.
Commenter	Nimphius, Donald J.
Comment I-435-2	As for equipment tilt technology should provide for future higher speeds.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, relating to the types of equipment to be operated as part of the Empire Corridor High Speed Rail Program. The selection of Alternative 90B as the Preferred Alternative, by the FRA and NYSDOT, considered railroad technology and systems as discussed in the Tier 1 EIS. Electrified dynamic tilt trains were evaluated in Chapter 3 as part of the 160 mph and 220 mph Very High Speed (VHS) alternatives, which were dismissed from further consideration.
Commenter	Nithikasem, Surasit
Comment I-436-1	I think that we should go with the 125 alternative.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).
Commenter	Nithikasem, Surasit
Comment I-436-2	We should also have the electrical supply systems to support speeds higher than 125 mph built into the current design of the 125 alternative such as constant tension catenary.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. Your suggestion to use electric power for operating the trains would be achieved by Alternative 125, which was dismissed from further consideration in the Tier 1 FEIS. The Preferred Alternative, Alternative 90B, was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance.
Commenter	Noblin-Jackson, Lisa A.
Comment I-437-1	Using the railway as a main source of travel throughout New York State is a viable choice for economic renewal, tourist growth and ecological stewardship. Improving the system and continuing to make rail service a priority from Niagara Falls to NYC and all points in between is the best plan this state has had in my lifetime.

Response	Your comments supporting the High Speed Rail Empire Corridor Program have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Nolan, CPA, Rita M.
Comment I-438-1	It is important that pedestrian/cyclist access be included in the design and construction of the new Livingston Avenue Bridge across the Hudson River.
Response	Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge .
Commenter	Nordheim, Shirley
Comment I-439-1	My concerns regarding this: 1. Cost? Too expensive (no project finished without cost overruns) 2. Ridership numbers – New York losing population probably need tax-payer subsidies. 3. Impact on communities? 4. Is there a real need for this? (Beyond the temporary construction job).
Response	Thank you for your comment on High Speed Rail Empire Corridor Program. Social, economic, and environmental factors have all been considered by the FRA and NYSDOT in the selection of the Preferred Alternative, as documented in the Tier 1 EIS.
Commenter	Nowak, Elizabeth L.
Comment I-440-1	As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons: -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-

	Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.
Commenter	Nuzback, Michael
Comment I-441-1	I believe the 110 and 125 alternatives would have the largest positive affect on many of the cities in New York State.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. Of the three Build Alternatives (90B, 110 mph and 125 mph) evaluated in the Tier 1 EIS, Alternative 90B would involve the lowest cost (less than half the cost of the most expensive alternative for 125 mph service), while providing the best overall on-time performance.
Commenter	Olds Sr., Dennis F.
Comment I-442-1	I am totally against the Base and 125 proposals because the former is too passive and the latter is too aggressive.
Response	Thank you for your comments relating to alternative preferences for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.
Commenter	Olds Sr., Dennis F.
Comment I-442-2	I also reject any proposal that has a significant potential to: -- adversely affect farm land and/or -- bypass Utica's train depot
Response	Thank you for your comments discussing the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B would provide 370 miles of additional trackage and would minimize potential impacts on farmlands by adding tracks primarily within the existing right-of-way, as discussed in Section 4.18. In addition, unlike Alternative 125, which would not provide express service to Utica, Alternative 90B would increase the frequency of service to Utica.
Commenter	Olds Sr., Dennis F.
Comment I-442-3	I would vote for Alternative 90A.
Response	Thank you for your comments in support of Alternative 90A and the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90A improvements are incorporated into Alternative 90B, which will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail.
Commenter	Olds Sr., Dennis F.
Comment I-442-4	every effort should be made to utilize the existing right-of-way.
Response	Thank you for your comments. Alternative 90B was selected as the Preferred Alternative, as it would add 370 miles of tracks and would constrain more of the additional trackage to the existing right-of-way than Alternatives 110 and 125.
Commenter	Olexenko, Peter

Comment I-443-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

- The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
- The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
- The Terminal is centrally located within a two-mile radius of city-center
- The Terminal also has secure parking facilities for up to 450 vehicles
- The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
- The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-440-1.

Commenter Zweig, Brian

Comment I-444-1 Please make pedestrian access a priority in the reconstruction of the Livingston Avenue rail bridge that connects Albany and Rensselaer.

Response Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge.

Commenter Oswald, Sean

Comment I-445-1 Please consider The Central Terminal building in Buffalo NY as a station for the Buffalo Metro area.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-440-1.

Commenter P., Ajay

Comment I-446-1 For 125 mph option

Response Thank you for your comments supporting the High Speed Rail Empire Corridor Program and the need for improving rail passenger service on the route, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.

	Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).
Commenter	Paarlberg, John
Comment I-447-1	A bicycle and pedestrian connection to the Livingston Avenue bridge is a great idea. Long past due!
Response	Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge .
Commenter	Paladino, Scotty
Comment I-448-1	High speed is very nice
Response	Your comment in support of the High Speed Rail Empire Corridor Program has been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Paladino, Scotty
Comment I-448-2	# 1 Eliminate Railroad crossings big problem with on time performance due to accidents. # 2 Security with terrorist and suicides of people. # 3 proper Drainage for track bed like in the MTA ,
Response	Thank you for your comments regarding safety, security and track maintenance, which are addressed in the High Speed Rail Empire Corridor Tier 1 EIS. Chapters 2 and 3 of the Tier 1 EIS address safety, including grade crossings, for the existing corridor and the program alternatives. Security and maintenance functions are the responsibility of the owners and operators of the rail lines. Each of these entities has police forces and maintenance forces that handle these needs. Comments from the public have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Palmer, Ada
Comment I-449-1	Please consider changing at grade crossings to include 4 quadrant crossings for all at grade crossings. Sadly, I have seen drivers cut between crossing gates.
Response	Thank you for your comments on the grade-crossings along the Empire Corridor. Chapters 2 and 3 address safety for the existing corridor and the program alternatives. Comments from the public, discussing the safety of the operation of the high speed trains for both grade crossings and along the right of way, have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Palmer, Ada
Comment I-449-2	I enjoyed a 50 mile train ride in Japan 2 years ago. I believe it is important to redevelop our railroad system.
Response	Thank you for your comments, which have been considered by the FRA and NYSDOT in selecting the Preferred Alternative.
Commenter	Palmer, Eugene

Comment I-450-1	We don't need high speed rail and additional deficits.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. Environmental and economic concerns, operating benefits, capital requirements, and responsiveness to passenger needs have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Palmer, Richard
Comment I-451-1	just get me to NYC at a reasonable hour from Upstate, which can't be done
Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program and the need for improving rail passenger service on the route, which have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Palvino, Jack
Comment I-452-1	There is no reason for expending tax dollars on a service no taxpayers have requested, used in other areas or will use in the future
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 EIS.
Commenter	Paolini, Edward
Comment I-453-1	With all the problems we have in NY (i.e. high taxes, over regulations, poor schools, government over reach including safe act) the last thing we need is a high speed rail across the state.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 EIS.
Commenter	Paolini, Margaret A.
Comment I-454-1	we have a wonderful building here in Buffalo- please consider our beautiful terminal and hook Buffalo up!
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.
Commenter	Paradowski, Mark

Comment I-455-1	<p>As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:</p> <ul style="list-style-type: none"> -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the prior response.
Commenter	Parke, Richard
Comment I-456-1	suggest we move slowly on Approval. Would recommend dedicating income from NY fracking towards this project.
Response	Thank you for your comments, which have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 EIS.
Commenter	Parker, Christine
Comment I-457-1	The investment of the High Speed Rail is necessary for the state of NY linking Western NY to Long Island will encourage economic development on a grand scale.
Response	Thank you for your comments supporting high speed rail, which have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Parrotte, Jeffrey M.
Comment I-458-1	I wish to voice my opinion in favor of high speed rail travel across Upstate New York. I am fully in favor of redeveloping a transportation system that allows for 125mph speeds, limited interference from freight and commuter traffic, and redeveloped crossings.
Response	Thank you for your comments, relating to Alternative 125, for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).
Commenter	Parsons, W.T.
Comment I-459-1	What assumptions have been made regarding the impact of rising sea level and flood frequency in the Hudson estuary's low lying tracks?
Response	Thank you for your comments concerning the impacts of climate change on rail performance in the lower Hudson Valley. The Tier 1 EIS documents potential program

impacts on climate change and flooding (Sections 4.9 and 4.20). Individual projects, or groups of projects, will undergo a second evaluation (Tier 2) to further advance the design for that project, or group of projects. Further evaluation of the location of tracks and impacts from rising sea level or flood conditions along the Hudson River can be evaluated in the Tier 2 assessments.

It should also be recognized that Metro North Railroad, in the aftermath of Hurricane Sandy, is taking measures to harden their facilities to better meet weather conditions along their portion of the route. Amtrak and NYSDOT are currently working on improving the tracks and signal system on the portion of the route from Poughkeepsie to Albany to improve operations on this portion of the Empire Corridor.

Commenter Patalita, John

Comment I-460-1 The project could be extended to include service across the Niagara Frontier to Toronto, further adding to ridership.

Response Thank you for your comments on the need for connections from Niagara Falls to Toronto. Currently, improvements to the service to be operated as part of the Empire Corridor High Speed Rail project are focused between Niagara Falls and New York City. The program will improve service that operates along Empire Corridor, including Maple Leaf service that continues into Toronto. The Preferred Alternative will improve service along the Empire Corridor, and improvements to Empire Service will benefit travel on connecting regional lines, including connecting trains to destinations such as Toronto and Hamilton (Maple Leaf Line).

Commenter Patierno, Michael

Comment I-461-1 Although this seems like a practical way of transportation I feel that this would not only be impractical but a waste of time and money. The high speed rail system is an outdated form of transportation. This technology has been around for decades and I feel that it would be a great waste of resources.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 EIS.

Commenter (No Last Name), Patricia

Comment I-462-1 With more people moving out of the city but yet commuting having only unreliable Amtrak that is prohibitively expensive to the average person or driving 1/2 way to the city to catch Metro North is also a super inconvenience, and archaic. NYS is best poised for rail system more than any other state. Why are we lagging behind? Is some group being paid off?

Response Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in selecting the Preferred Alternative.

Commenter Pawenski, Chris

Comment I-463-1 I believe a new single station should be built no matter which Alternative is selected. A station near Buffalo's CBD, such as near Larkinville would enable all train riders to utilize it.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-454-1.

Commenter Pawenski, Chris

Comment I-463-2	The current stations at Exchange St. and in Depew are NOT welcome sites to out of town visitors.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the stations in Buffalo, New York. Improvement to the passenger rail facilities in the City of Buffalo area is an important goal of the High Speed Rail Empire Corridor Program. NYSDOT has implemented upgrades at the existing rail station at Buffalo-Depew to improve/rehabilitate the parking lot and enhance passenger access to comply with Americans with Disabilities Act requirements. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the prior response.
Commenter	Pawensla, Chris
Comment I-464-1	It would be very helpful if the average speed and time to travel were broken down into two phases, 1. Buffalo to Albany and 2. Albany to NYC. This would better illustrate the true/higher average speed to Albany along with the shorter time, and in turn illustrate a better connectivity between the Queen City and the State Capital.
Response	Thank you for your comments, more detailed information on rail operations is presented in Appendix D, Rail Network Operations Simulation.
Commenter	Pawlowski, Lenore
Comment I-465-1	High speed rail sounds great in theory, but it will only reduce the time to travel across the state by only an hour or two over what it now is with Amtrak. When it can get me to NYC from Buffalo in four hours, then I'll support it. Until then, it's not worth putting public money into it.
Response	Thank you for your comments on the Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. In developing the alternatives in the Tier 1 EIS for the High Speed Rail Empire Corridor Program, very high speed (VHS) alternatives were considered, but were not selected in part because they were considered to be cost-prohibitive.
Commenter	Pellingra, Justin
Comment I-466-1	Building two alternatives 90A and 125 would have benefits in the near term and long term. The additional cost is about 1 ½ billion. Doing them both at the same time results in long term benefits for people riding in 2035 and short term benefits for people in 5 years, 10 years, etc. as improvements are made. Later when the 2035, 125 project is completed the earlier improvements of 90A project could revert to freight traffic. CSX would at that point have it's own area without passenger lines interfering. They, CSX, would also be able to move faster from these improvements.
Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative). The Alternative 90A improvements are incorporated into the Preferred Alternative.
Commenter	Pellman, John
Comment I-467-1	I strongly support the notion of building high-speed rail infrastructure here in New York

Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Pellman, John
Comment I-467-2	From the DEIS report, I would have to rank the plans for building high speed rail as follows (from most desirable to least desirable): 110, 90B, 125, 90A. 110 seems to be the most practical plan in terms of environmental impact and giving us the most bang for our buck.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternatives 90B and 110 would restore large sections of third and fourth track, but Alternative 90B would constrain more of the additional trackage to the existing right-of-way, substantially reducing costs and impacts. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property.
Commenter	Pellman, John
Comment I-467-3	I would like to add to my previous remarks that I would really like to see alternative 125 put into effect
Response	Thank you for your comments in support of the Alternative 125, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).
Commenter	Pena, Oscar
Comment I-468-1	As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons: -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in

a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter Pescrillo, Jordan

Comment I-469-1 I truly believe that a high speed rail could provide jobs and the traffic the East Side needs to revitalize instead of continually “bomb out” neighborhoods.

Response Thank you for your comments supporting the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter Peters, Ariel

Comment I-470-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:
 -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
 -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
 -The Terminal is centrally located within a two-mile radius of city-center
 -The Terminal also has secure parking facilities for up to 450 vehicles
 -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
 -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-468-1.

Commenter Peterson, Lorna

Comment I-471-1 Please make NYS economically competitive by adding high speed rail as a transportation choice.

Response Thank you for your comments supporting the High Speed Rail Empire Corridor Program and for the need for improving rail passenger service on the route, which have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter Peterson, Lorna

Comment I-471-2 I am greatly in favor of high speed rail in NYS
 The proposed route from NYC to Niagara Falls is also sensible because it will capture tourism as well as business and education dollars. Niagara Falls as the final destination

would encourage Buffalo and the NFTA to improve transportation between the two cities beyond its current #40 Grand Island bus route.

Response Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in selecting the Preferred Alternative.

Commenter **Petko, Stephen**

Comment This would be absolutely fantastic.
I-472-1

Response Your comments in support of the High Speed Rail Empire Corridor Program have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter **Phillips, Scott**

Comment High Speed Rail to Buffalo? YES! please get this project on the books
I-473-1

Response Your comments supporting the High Speed Rail Empire Corridor Program have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter **Piecuch, Sarah**

Comment I would like to see alternative 110 progressed.
I-474-1

Response Thank you for your comments in support of the High Speed Rail Empire Corridor Program and Alternative 110, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Because of the required property acquisitions, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance.

Commenter **Piecuch, Sarah**

Comment One thing that confused me tonight was why downstate trips increased per alternative at a much higher rate than the upstate lines?
I-474-2

Response Thank you for your comment discussing the frequencies of service on different segments of the Empire Corridor for the different alternatives in the Tier 1 EIS for the High Speed Rail Empire Corridor Program. The downstate segment, anchored by the New York Metropolitan Area at its southern tip, is expected to grow much faster than the rest of the state, thereby resulting in more trips. Also, highway congestion in the metropolitan area is expected to worsen, thereby resulting in a higher mode shift to rail. Every incremental improvement in the total run times leads to increased trips between the New York Metropolitan Area and all the other upstate stations, largely because of the socioeconomic projections and expected highway congestion. The trips between the upstate cities do not increase at an equally rapid rate because the population base around the station area is comparatively low and non-congested highways provide an easy mode of transportation thereby resulting in a lower mode shift to rail. Service in the segment of the route between Albany and New York City also accommodates many passengers, who use or will utilize the trains for commuting to their places of employment in New York City. It is also anticipated that improvements in the service in this segment of the corridor, will also encourage other individuals to use the trains for their daily commuting.

Commenter **Pieniazek, Nicholas**

Comment I-475-1	I wonder how this will be paid for, and once the project is completed how will it continue to pay for itself?
Response	Thank you for your comments regarding the implementation of the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 EIS. Future funding for the program has not been determined at this time. The program schedule and implementation have been considered in selecting the Preferred Alternative, and the implementation of service initiatives have been investigated in the development of the Service Development Plan. Economic costs and benefits of each alternative for the High Speed Rail Empire Corridor Program have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. Chapters 5 and 6 of the Tier 1 EIS describe the costs and benefits of the program alternatives.
Commenter	Plaat, Daniel
Comment I-476-1	Thus I am in favor of the ALt 110; but, should the capital be available Alt 125 is tempting, despite the need to cut a new path for the express line and other causes of higher environmental impact.
Response	Thank you for your comments in support of Alternative 110 and 125 and the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Of the three higher speed Build Alternatives (90B, 110 mph and 125 mph) evaluated in the Tier 1 EIS, Alternative 90B would involve the lowest cost (less than half the cost of the most expensive alternative for 125 mph service), while providing the best overall on-time performance and the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Plaat, Daniel
Comment I-476-2	A comment on the designs of the new stations; though a massive improvement on the existing, don't look like they would be built in 2016-18, but the 1940's.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. In some cases, the station designs need to reflect the historic character of the existing stations, depending on the location. Any individual projects, or groups of projects selected for implementation as part of the Preferred Alternative, will undergo a second evaluation (Tier 2) to further advance the design for that project, or group of projects. Further evaluation of the specific projects and related improvements to stations can be evaluated in Tier 2 or as separate, independent projects.
Commenter	Plaat, Daniel
Comment I-476-3	A comment that the Livingston Ave rail bridge needs to be considered. This is a local matter for me living a mile away and I can't stress enough the need for a bike and pedestrian path on that bridge for better access to the other side of the river.
Response	Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge .
Commenter	Plante, Gerald

Comment I-477-1	I wholeheartedly support the DEIS for the Empire Corridor Project.
Response	Your comments in support of the High Speed Rail Empire Corridor Program have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Prenty, Noreen
Comment I-478-1	I hope bicycle traffic will be considered when the Livingston Ave railroad bridge plans are completed.
Response	Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge .
Commenter	Preske, Carl
Comment I-479-1	The best choice for the cost would be option 110.
Response	Thank you for your comments in support of Alternative 110 and the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternatives 90B and 110 would restore large sections of third and fourth track, but Alternative 90B would constrain more of the additional trackage to the existing right-of-way, substantially reducing costs and impacts. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property.
Commenter	Preske, Carl
Comment I-479-2	Increasing Frequency would be an improvement but not as important as increased speed and shortened travel times.
Response	Thank you for your comments regarding improvements to service frequency, travel times, and speeds for the High Speed Rail Empire Corridor Program. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail, and Alternative 90B would also shorten the trip from New York City to Niagara Falls by 1½ hours. A comparison of trip times and frequencies are discussed in Chapter 3 of the Tier 1 EIS for the High Speed Rail Empire Corridor Program. In Chapter 6, there is a comparison of the travel times and frequency of service for the different alternatives.
Commenter	Price, Joshua, D.S. Ray Middle School, D.S. Ray Middle School
Comment I-480-1	I feel that the new and improved High Speed rail train is a really good idea. With speeds up to 90 mph is good, for the Emerging High Speed Rail going from 100 to 500 miles people could get there in plenty of time.
Response	Thank you for your comments in support of emerging high speed rail (speeds up to 90 mph) for the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in selecting Alternative 90B as the Preferred Alternative.
Commenter	Priestley, Robert

Comment I-481-1	I think its great to have the faster trains going to upstate, NY
Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Priestley, Robert
Comment I-481-2	would be nice if amtrax had a stion or atleast a pick up point near suffern,ny.
Response	At this time, the High Speed Rail Empire Corridor Program is focused on improving intercity rail passenger service along the Empire Corridor between New York City and Niagara Falls. Amtrak Empire Corridor trains serve stations in Westchester County, at Yonkers and Croton-Harmon, along with Pennsylvania Station in New York City. The inclusion of additional stations along the Empire Corridor could be part of future studies for expanding service.
Commenter	Provino, Paul
Comment I-483-1	I hope that NYS can incorporate Buffalo's central terminal into their plan for high speed rail!
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.
Commenter	Pucalski, Christopher
Comment I-484-1	High speed rail access to the Falls, and improvement of other rail systems in the Buffalo/Niagara area is the best way to facilitate new passenger rail efficiencies in WNY.
Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will reduce travel times between New York City and Niagara Falls by 1 ½ hours in 2035, compared to the Base Alternative. Alternative 90B will also increase the frequency of service to Buffalo/Niagara Falls.
Commenter	Puckett, Michael
Comment I-485-1	Any and all efforts to make the Capital Region more bike-able should be undertaken. Bike paths along the Livingston Ave Bridge are key to making that happen for those on the east side of the Hudson!

Response	Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge .
Commenter	Punturiero, Brian
Comment I-486-1	I would love to see a high speed rail stop here in Buffalo.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the need for a station stop in Buffalo, New York. The Preferred Alternative, Alternative 90B, will continue to provide service to existing stations. The focus was on utilizing existing stations along the Empire Corridor including the stations at Buffalo-Depew and Buffalo-Exchange Street.
Commenter	Puritz, Becky
Comment I-487-1	I'd simply like to add my support to bicycle and pedestrian facilities being included in any repairs and development of the Livingston Avenue Bridge in Albany.
Response	Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge .
Commenter	Pusateri, Robert G.
Comment I-488-1	I am in favor of the High Speed Rail project.
Response	Thank you for your comments supporting the High Speed Rail Empire Corridor Program and the need for improving rail passenger service on the route, which have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Putnam, Randal
Comment I-489-1	I am writing in support of a pedestrian and bicycle path on the Livingston Avenue Bridge.
Response	Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge .
Commenter	R., Steve
Comment I-490-1	The % of New Yorkers to utilize this rail system is not worth the time and \$ when the \$ can be used towards Thruway improvements and/or Education.

Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. Environmental and economic concerns, operating benefits, capital requirements, and responsiveness to passenger needs have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Rain, Dan
Comment I-491-1	The Livingston Avenue Bridge Walkway is a critical connection that can be built safely and cost effectively. It has significant support both locally and regionally. I urge the Federal Rail Administration and the New York State Department of Transportation take the necessary steps to make the Walkway a reality for our community!
Response	Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge .
Commenter	Randazzo, Robert
Comment I-492-1	Can you provide a breakdown, by alternative, what this would actually cost each NYS taxpayer? That's what people need to know and understand to support something like this.
Response	Thank you for your comments regarding the implementation of the High Speed Rail Empire Corridor Program. Economic costs and benefits of each alternative have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. The Tier 1 EIS presents costs by alternative in Chapters 3, 5, and 6. Future funding for the program has not been determined at this time. Ridership and revenue performance have been considered in selecting the Preferred Alternative, and the implementation of service initiatives have been investigated in the development of the Service Development Plan. In the Tier 2 assessments, individual projects or groups of projects will be further advanced in terms of costs, scheduling, and funding, according to the Service Development Plan.
Commenter	Rathbun, Susan
Comment I-493-1	I vote for Alternative 125.
Response	Thank you for your comments in support of Alternative 125, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).
Commenter	Rawls, Brittany
Comment I-494-1	As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons: <ul style="list-style-type: none"> -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles

-The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
 -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degree programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter Reamer, Stephen D.

Comment I-495-1 A maglev train is the only way to go to truly be high speed. I don't see a need for new rights' of way either. Using the land separating the lanes along the national interstate system would not require new easements.

Response Thank you for your comment on the High Speed Rail Empire Corridor Tier 1 DEIS. In reviewing the types of technologies to be used in providing the service, the focus was on using systems that would allow for connecting with the existing rail network, and development that was within possible funding levels and time constraints for construction. During the selection of the alternatives for review in the Tier 1 EIS, alternatives with speeds of 160 mph and 220 mph were considered but not advanced. It was determined that the range of options advanced would be those with trains operating at 90, 110 and 125 miles per hour. It was determined that operating trains at higher speeds would have greater impact on the environment, require more financial investment to construct and require more public resources to operate. Comments from the public, relating to the different service alternatives, have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.

Commenter Reamer, Stephen D.

Comment I-495-2 The project estimate costs for this proposal are not realistic.

Response Thank you for your comment. Capital costs for the alternatives being considered in the High Speed Rail Empire Corridor Tier 1 EIS are developed at a high level. The purpose of estimates is to ensure that costs are estimated in consistent terms across the alternatives being evaluated, such that values for each alternative can be reasonably compared. This approach supports rational decision-making by NYSDOT and the public based on common understandings of the likely relative cost of each alternative compared to the others. Details of the development of the cost for each alternative are included in Chapters 3 and 5 and Appendix F of the Tier 1 EIS.

Commenter Rebbear, James

Comment I-496-1	i think the 120 mph is the best option. faster trip to the city.
Response	Thank you for your comments in support of Alternative 125, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).
Commenter	Rebmann, Michael
Comment I-497-1	It is my opinion that the Empire Corridor Project is a huge waste of taxpayers' money.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 EIS.
Commenter	Rebmann, Michael
Comment I-497-2	Bus travel is much more economical. Car travel is much more convenient and flying is much quicker. Instead, the state should consider improving the Thruway and raising the speed limit to at least 80 m.p.h.
Response	Thank you for your comments about the High Speed Rail Empire Corridor Program. At this time, the Tier 1 EIS evaluation focuses on improving intercity rail passenger service along the Empire Corridor between New York City and Niagara Falls. Improving the New York State Thruway is not included in this program. Consideration of the needs for the interstate highway system was not included in the scope of the program. However, the proposed rail improvements are anticipated to result in a diversion of trips from the highway system, resulting in operational benefits. Economic costs and benefits of each alternative, relating to the High Speed Rail Empire Corridor Program, have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Reeher, John
Comment I-498-1	The advantage of high speed rail is "high speed", and while going from 110 to 125 MPH doubles the cost, it also eliminates nearly an hour 1 way in trip time.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B was selected as the Preferred Alternative, as it would add 370 miles of tracks and would constrain more of the additional trackage to the existing right-of-way than Alternatives 110 and 125.
Commenter	Reeher, John
Comment I-498-2	At 125 mph, the service is competitive with car and air, but anything slower and I probably won't utilize the service.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).
Commenter	Reichmuth, Elaine

Comment I-499-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:
 -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
 -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
 -The Terminal is centrally located within a two-mile radius of city-center
 -The Terminal also has secure parking facilities for up to 450 vehicles
 -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
 -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-494-1.

Commenter Render, Dave

Comment I-500-1 I whole-heartedly support the re-establishing of the pedestrian and bicycle access to the Livingston Avenue bridge.

Response Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge.

Commenter Rezak, David

Comment I-501-1 We strongly support high speed rail service for Upstate NY! Alternative 110 will boost upstate access the way the Erie Canal did nearly 200 years ago

Response Thank you for your comments in support of the program, and Alternative 110, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternatives 90B and 110 would restore large sections of third and fourth track, but Alternative 90B would constrain more of the additional trackage to the existing right-of-way, substantially reducing costs and impacts. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property.

Commenter Rezak, Linda

Comment I-502-1 We support alternative 110 and will be regular riders to and from Metro NYC. Please move this project forward.

Response Thank you for your comments in support of the High Speed Rail Empire Corridor Program and Alternative 110, which have been considered by FRA and NYSDOT in the selection of

	Alternative 90B as the Preferred Alternative, for the reasons outlined in the preceding response.
Commenter	Richards, Charles
Comment I-503-1	Let's get this high speed deal going! I'd love to travel by train from Utica to NYC quicker and more often. I'd visit NYC a lot more often. Currently I can drive faster!
Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Richardson, David
Comment I-504-1	The information that I have does not mention the economic impact that would result from this project. I suspect that jobs created would be substantial.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. Economic costs and benefits of each alternative for the High Speed Rail Empire Corridor Program have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. Section 4.3, Regional Population and Employment, and Business Districts, discusses how the program will create employment opportunities and support the labor markets in the regions served by the improved rail service. Chapters 5 and 6 of the Tier 1 EIS describe the costs and benefits of the program alternatives.
Commenter	Richardson, David
Comment I-504-2	The base alternative makes little sense to me as the state would be looking for additional improvements within a few years. 90B appears to be the minimum alternative required to meet ridership needs.
Response	Thank you for your comments in support of Alternative 90B, which have been considered by FRA and NYSDOT in the selection of 90B as the Preferred Alternative.
Commenter	Riley, Jibreel
Comment I-505-1	looking forward to high speed rail to grow the upstate region.
Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Riley, Jibreel
Comment I-505-2	The high speed I am looking for is more of faster track times, more trains, more availability, and probably just to clear up more track from the freight. I guess both are a win-win situation for passenger rail and freight rail.
Response	Thank you for your comments on the High speed Rail Empire Corridor Program. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Rittenhouse, Maryanne
Comment I-506-1	I think that this is a TREMENDOUS idea.

Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Robe, Susan
Comment I-507-1	As a lifelong resident of New York I feel this project would benefit our state for all age groups.
Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Roberts, Carol
Comment I-508-1	yes to high speed rail and the faster the better. The cost is well worth it!
Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Rodriguez, Eva
Comment I-509-1	I support any improvement to our bridges (especially those whose walkways & bike trails can be improved, or developed)!
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. Individual projects, or groups of projects, (such as bridge walkways and bike trails) will undergo a second evaluation (Tier 2) to advance the design for that project, or group of projects.
Commenter	Roertgen, Brandon
Comment I-510-1	I support the development of a new express line along the Empire Service Corridor to improve service
Response	Thank you for your comments, which FRA and NYSDOT have considered in the selection of the Preferred Alternative.
Commenter	Rogers, Amanda
Comment I-511-1	<p>As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:</p> <ul style="list-style-type: none"> -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.
Commenter	Rogers, Andy
Comment I-512-1	given the current economic state of NY I believe project level 90A is best as uses much of existing infrastructure - the only drawback would be rerouting of freight at certain locations where traffic highest but still much cheaper than a dedicated line
Response	Thank you for your comment in support of Alternative 90A. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage, located primarily within the existing right-of-way, to better segregate passenger and freight rail. Alternative 90B will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. The Alternative 90A improvements are incorporated into the Preferred Alternative.
Commenter	Rogers, Cheryl
Comment I-513-1	As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons: -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-511-1.
Commenter	Rogers, John
Comment I-514-1	I am opposed to spending billions for high speed rail.

Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 EIS.
Commenter	Rogge, David
Comment I-515-1	Please make use of the historic Buffalo Central Terminal for your high speed rail project in the empire corridor.
Response	The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-511-1.
Commenter	Rohman, Henry Lee
Comment I-516-1	THE WESTERN NEW YORK AREA NEEDS ALL THE HELP IT CAN GET.
Response	Thank you for your comments, relating to the support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Rohman, Henry Lee
Comment I-516-2	I love the railroad and I would ride it my self.
Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Romanowski, Margaret
Comment I-517-1	<p>As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:</p> <ul style="list-style-type: none"> -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-511-1.
Commenter	(No Last Name), Ronnie

Comment I-518-1	We need high speed rail in New York.
Response	Thank you for your comments supporting the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Root, Chris
Comment I-519-1	From my studying and understanding of the proposed plans, it seems that alternatives 110 and 125 are clearly the best at promoting fast high speed travel between Niagara Falls and NYC.
Response	Thank you for your comments in support of the program, and Alternatives 110 and 125, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. Alternative 90B was selected as the Preferred Alternative, as it would add 370 miles of tracks and would constrain more of the additional trackage to the existing right-of-way than Alternatives 110 and 125.
Commenter	Root, Chris
Comment I-519-2	One problem that I see with proposal 125 is that it skips many smaller upstate cities
Response	Thank you for your comments about preserving and offering intercity rail passenger service for the City of Utica, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was designed to help cut the distance between Albany and Syracuse by 14 miles, but one of the major drawbacks of this route is that it passes to the south of the stations on the current Empire Corridor in the Mohawk Valley between Syracuse and Albany. Therefore, 125 express service would not serve Rome, Utica, Amsterdam, and Schenectady. The Preferred Alternative, Alternative 90B, was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance. As discussed in Chapter 3 of the Tier 1 EIS, the Preferred Alternative would increase service to Utica (doubling the frequency).
Commenter	Root, Chris
Comment I-519-3	I feel that the reuse of the Buffalo Central Terminal should be essential to be included in the proposed projects.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.
Commenter	Rose, David

Comment I-520-1	If we begin to dream big, and plan around our big dreams, the central terminal could be more than just a mere reuse success story; Buffalo could change the world, again!!!
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the prior response.
Commenter	Rose, Joel S.
Comment I-521-1	I urge you to include Buffalo's Central Terminal in New York's high speed rail system.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-519-3.
Commenter	Rosenberg, Marc
Comment I-522-1	Yes, highest speed rail
Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Rosenberg, Nancy
Comment I-523-1	Yes! We definitely need high speed trains! Awesome project! Get it done!!!!
Response	Your comments supporting the High Speed Rail Empire Corridor Program have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Rosenberg, Nancy
Comment I-523-2	Yes! We need "high speed" (fast as possible) rail to NYC from Buffalo... stops need to be a quick turn over and in Niagara Falls, Buffalo, Rochester, Syracuse, Utica, Sch/Albany, Rhinebeck, Poughkeepsie, NYC.
Response	Thank you for your comments supporting the program, which have been considered by the FRA and NYSDOT in selecting the Preferred Alternative. Alternative 90B will maintain and improve service to existing station stops, and the schedules have been developed in the Service Development Plan to optimize passenger service. Further schedule development will occur as part of the Tier 2 assessments.
Commenter	Rotolo, Tom and Barbara
Comment I-524-1	we don't need to spend money to make the trains travel at a faster speed. We need to upgrade what we already have. It seems the railroads are in neglect. More people are willing to travel by rail than every before. How about putting the capital in the train stations, tracks and railroad cars.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B would involve lesser costs and speeds increases

	than Alternatives 110 and 125 and would constrain more of the additional trackage to the existing right-of-way.
Commenter	Roy, Eileen
Comment I-525-1	I'm very interested to see high speed rail become a reality for our State.
Response	Thank you for your comments in support of high speed rail, which have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Rumril, Peter
Comment I-526-1	Improvements to rail safety upstate is more necessary than improvements in rail speed.
Response	Thank you for expressing your concerns about safety improvements on the Empire Corridor. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. These improvements that will reduce congestion, delays and interference between passenger and freight trains will improve safety. Chapters 2 and 3 address safety for the existing corridor and the program alternatives, and proposed safety and design measures will be further developed in the Tier 2 assessments.
Commenter	Rumril, Peter
Comment I-526-2	Until the ROW is safe, speeds should not be increased.
Response	Thank you for your comments on the importance of safety being a part of the High Speed Rail Empire Corridor Program. As discussed in the previous response, the Preferred Alternative, Alternative 90B, will add additional trackage, the majority of which (over 280 miles) will consist of third dedicated track. This will better segregate passenger and freight rail, which will allow improvements in both rail safety and travel speeds.
Commenter	Rumril, Peter
Comment I-526-3	I believe a better solution would be to work a deal with CSX to acquire the South Shore line as an exclusive passenger line around Rochester. It's shorter and would be a better location for the new station rather than build it in an area frequented by homeless panhandlers and drug dealers.
Response	Thank you for your comment regarding train operations in the City of Rochester. The HSR Program outlined in the Tier 1 EIS focuses on improvements and alternatives on or near the current alignment of the rail passenger service between Albany and Niagara Falls, New York. The Tier 1 EIS evaluates the operation of passenger and freight trains along the Empire Corridor, and the Preferred Alternative will add approximately 370 miles of additional trackage, including third and sections of fourth tracks in Rochester, to better segregate passenger and freight rail. As projects are considered under the Tier 2 assessments for the program, the impact of railroad operations on grade crossing can be reviewed with a focus on promoting safety.
Commenter	(No Last Name), Russ
Comment I-527-1	Central terminal!

Response	The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-519-3.
Commenter	Russell, CPA, Robert
Comment I-528-1	What I want you to understand is that supporting a pedestrian/bicycle walkway on the Livingston Avenue Bridge upgrade/replacement is just one more piece of the puzzle that will allow me to bicycle from my house to work with virtually no conflict with motorized vehicles!
Response	Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge .
Commenter	Sackett, John L.
Comment I-529-1	OLD TECHNOLOGY- WHY NOT USE MAGNETIC OR MONO RAIL TECHNOLOGY
Response	Thank you for your comments on the High Speed Rail Empire Corridor Tier 1 DEIS. In reviewing the types of technologies to be used in providing the service, the focus was on using systems that would allow for connecting with the existing rail network, and development that was within possible funding levels and time constraints for construction. During the selection of the alternatives for review in the Tier 1 EIS, alternatives with speeds of 160 mph and 220 mph were considered but not advanced. It was determined that the range of options advanced would be those with trains operating at 90, 110 and 125 miles per hour. It was determined that operating trains at higher speeds would have greater impact on the environment, require more financial investment to construct and require more public resources to operate. Comments from the public, relating to the different service alternatives, have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.
Commenter	Sackett, John L.
Comment I-529-2	DISCRIMINATORY- PARTICULARLY THOSE THAT LIVE outside CITIES ! UNLESS elevated transportation SYSTEM IS UTILIZED MOST ROAD CROSSINGS WILL BE ELIMINATED! THAT INVOLVE.S OUR SCHOOLS, OUR FIRE DEPARTMENTS, OUR AMBULANCE SERVICES, OUR CONSIDERABLE FARMERS, AND OF COURSE DISADVANTAGE OF OUR CITIZENS. THE ADDITIONAL MILEAGE ALONE WILL DO more ENVIRONMENTAL DAMAGE THAN THE NEW CONVENTIAL HIGH SPEED RAILROAD WILL PROVIDE !
Response	Thank you for your comments on the Tier 1 EIS. Chapters 2 and 3 address safety for the existing corridor and the program alternatives. The Tier 1 FEIS accounts for several types of fencing and warning systems, and safety features for the Preferred Alternative in Section 3.3.3, under the "Safety" section. Comments from the public, discussing the safety of the operation of the high speed trains for both grade crossings and along the right of way, have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As projects are considered in the Tier 2 assessments for the program, the impact of railroad operations on grade crossing can be reviewed with a focus on promoting safety.
Commenter	Sadowski, Emily

Comment I-530-1	I feel that the Buffalo Central Terminal reuse should be included in all NYS High Speed Rail project proposals.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.
Commenter	Salsburg, Fred
Comment I-531-1	For us, the travel speed of the train is not very important and we don't think that any money should be spent to increase it. Going 20 MPH faster increases the difficulty and danger for very little benefit, when it's going to stop at a station pretty soon. Not much effect on the average speed.
Response	Thank you for your comments, relating to the High Speed Rail Empire Corridor Program, have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Salsburg, Fred
Comment I-531-2	We won't take the train to go west of Buffalo, the schedule for the Chicago train is too inconvenient to leave in the middle of the night and we won't do it.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. Currently, improvements to the service to be operated as part of the High Speed Rail Empire Corridor Program are focused between Buffalo/Niagara Falls and New York City.
Commenter	Salsburg, Fred
Comment I-531-3	So, make changes the so the existing trains don't have to stop due to track usage. And put another Chicago train on a schedule 12 hours offset to the one that runs now and you would have us as customers several times a year.
Response	Thank you for your comments, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B will maintain and improve service to existing station stops, and the schedules have been developed in the Service Development Plan to optimize rail service. Further schedule development will occur as part of the Tier 2 assessments.
Commenter	Salzyn, John
Comment I-532-1	The Central Terminal in Buffalo, an iconic symbol of rail traffic, would make an excellent spot for a rail stop. I would love to see this beautiful building reused.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central

	Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-530-1.
Commenter	Samson, Joseph
Comment I-533-1	Alternative 125, although having the greatest reduction in travel times does not stop in Utica.
Response	Your comments about preserving and offering intercity rail passenger service for the City of Utica have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was designed to help cut the distance between Albany and Syracuse by 14 miles, but one of the major drawbacks of this route is that it passes to the south of the stations on the current Empire Corridor in the Mohawk Valley between Syracuse and Albany. Therefore, 125 express service would not serve Rome, Utica, Amsterdam and Schenectady. Alternative 90B was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance, and would increase service to Utica, as discussed in Chapter 3 of the Tier 1 EIS.
Commenter	Sandberg, Glenn
Comment I-534-1	The planned rebuilding of Albany's Livingston Avenue Railroad Bridge presents a one-time, unique opportunity to restore the pedestrian / bicycle walkway between both sides of the Hudson River.
Response	Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge .
Commenter	Santiago, Jennifer
Comment I-535-1	The planned rebuilding of Albany's Livingston Avenue Railroad Bridge presents a one-time, unique opportunity to restore the pedestrian / bicycle walkway between both sides of the Hudson River.
Response	Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge .
Commenter	Santos, Rob
Comment I-536-1	As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons: -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles

-The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
 -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-530-1.

Commenter **Savage, Anne**

Comment I am writing to express my strong support for re-establishing pedestrian and cycling access in the construction of the New Livingston Avenue Bridge.

I-537-1 The bridge was originally built as a multi-modal facility, and the benefits of returning it to its original role are noted in several planning documents including the Albany 2030 Comprehensive Plan (2011), the City of Rensselaer Local Waterfront Revitalization Program Update (2011), the Albany Master Bike Plan (2009), the Hudson River Crossing Study (2008), the Tech Valley Trails Regional Trails Plan (2007), the Patroon Creek Greenway Plan (2004), the Rensselaer County Trail from the Livingston Ave. Bridge to the Troy-Menands Bridge (2004), and the Regional Enterprise for a Vital Economy and Sustainable Transportation (REVEST) (1998).

I add my voice to that of the Albany County Legislature, City of Albany Common Council, Rensselaer County legislature, and the City of Rensselaer Common Council. The Hudson River Valley Greenway Council and Conservancy who have all voted to unanimously support the reconstruction of the walkway.

Response Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge.

Commenter **Scammell, G.**

Comment Simply no need for anyone to fund this except those who use it.

I-538-1

Response Thank you for your comments, relating to the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter **Scavo, Dominick**

Comment Here we have the chance to get a high speed rails in our community and now if the 125mph rail is chosen it will by pass Utica. Once again the area that time forgot will be forgotten again. I urge you to include Utica nad go with the 110 mph, this is fast enough. It will give the community an opportunity to get on a train and proceed to their destination with no problems. Please do not forget that NANO Utica will be here and wouldn't it be nice if can offer high speed rail service to NYC to the new employees who may want to visit NYC for a day or two instead of traveling to UTICA or ALBANY.

I-539-1

By the way if you have anything to do with it how about passing the Adirondack Railroad extension from Utica to Lake Placid talk about increasing tourism. I am sure the snowmobilers can work out a compromise, we have a lot going for us...MAKE IT HAPPEN.

Response Your comments about preserving and offering intercity rail passenger service for the City of Utica have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was designed to help cut the distance between Albany and Syracuse by 14 miles, but one of the major drawbacks of this route is that it passes to the south of the stations on the current Empire Corridor in the Mohawk Valley between Syracuse and Albany. Therefore, 125 express service would not serve Rome, Utica, Amsterdam and Schenectady. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Because of the required property acquisitions, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance. Alternative 90B was selected over Alternatives 110 and 125, based on its substantially lower costs, impacts, and its performance, and would increase service to Utica, as discussed in Chapter 3 of the Tier 1 EIS.

Commenter Schanne, Joseph

Comment I-540-1 I remember the buffalo terminal as a kid with the big buffalo inside what a solid bldg. with history!!! People would love to see these vacant treasures to make a come back. Please look into using it!!!

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter Scheyer, Lawrence W., Attorney at Law, Attorney at Law

Comment I-541-1 any true high speed passenger service we introduce Upstate has got to operate on its own dedicated right of way.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail, the majority of which consists of dedicated third track.

Commenter Scheyer, Lawrence W., Attorney at Law, Attorney at Law

Comment I-541-2 Accordingly, I strongly urge you to advocate for the setting aside of existing railroad right of way (and making additional acquisitions, as necessary) that are required for creating a

continuous, dedicated right of way that is needed to support the next generation of truly safe and efficient high speed surface transportation in New York State.

Response Your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program discussing the need for dedicated right-of-way have been considered in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail, the majority of which consists of dedicated third track. Alternative 90B would constrain more of the additional trackage to the existing right-of-way to minimize the impact on surrounding communities and environment.

Commenter Schmidt, Dawn

Comment I-542-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:
 -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
 -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
 -The Terminal is centrally located within a two-mile radius of city-center
 -The Terminal also has secure parking facilities for up to 450 vehicles
 -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
 -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Buffalo Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-540-1.

Commenter Schou, Bertil

Comment I-543-1 I am writing to support the effort to restore the bicycle and pedestrian access on the Livingston Avenue Bridge when it is rebuilt or replaced.

Response Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge.

Commenter Schroeder, Tim

Comment I-544-1 I think that the 90B and 110 options seem like very sensible ways to improve both passenger and freight transport.

Response Thank you for your comments, relating to these different alternatives, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. Alternative 90B was selected as the Preferred Alternative, as it would add 370 miles of tracks and

	would constrain more of the additional trackage to the existing right-of-way than Alternatives 110 and 125.
Commenter	Schroeder, Tim
Comment I-544-2	I am wondering if you had also perhaps considered a "110e" that also would electrify the existing corridor?
Response	Thank you for your comments on the Tier 1 EIS for the High Speed Rail Empire Corridor Program and on electrifying the 110 Alternative. In developing the operating criteria for the different alternatives outlined in the Tier 1 EIS, the focus was to utilize technologies that would be compatible with existing operation and within available project funding. Electrification would require some unique engineering challenges in maintaining the vertical clearances for some of the common trackage with CSX Transportation. Also, the frequency of service with the increase from four to eight round-trips west of Albany would not support the level of investment required to electrify the trackage at this time. Alternative 110 was dismissed from further consideration, based on greater right-of-way impacts, since CSXT would require a 30-foot track offset from freight for trains operating at this speed.
Commenter	Schultz, F. Justin
Comment I-545-1	I feel that the buffalo central terminal should be included for all high speed rail proposals from the New York State DOT
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-540-1.
Commenter	Seefeldt, Joanne
Comment I-546-1	Opening up the Buffalo railroad terminal to high speed rail traffic makes perfect sense. Please consider and support using the old Buffalo railroad terminal through the Empire Corridor Project.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-540-1.
Commenter	Seiders, Daniel
Comment I-547-1	As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons: -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development

-The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-540-1.

Commenter Seifritz, Griffin, D.S. Ray Middle School, D.S. Ray Middle School

Comment I-548-1 High Speed Rail will be an important part of society in both the coming years and beyond.

Response Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter Seifritz, Griffin, D.S. Ray Middle School, D.S. Ray Middle School

Comment I-548-2 The most beneficial alternative is the 125 mph HSR for many reasons.

Response Thank you for your comments in support of Alternative 125, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).

Commenter Seifritz, Griffin, D.S. Ray Middle School, D.S. Ray Middle School

Comment I-548-3 Without high speed rail New York will not be able to grow and prosper to become the society that we want. The shinkansen high speed rail in Japan traveled at speeds of 130 mph, shuttling 100,000 passengers in its first three years of service. There is no reason New York cannot achieve the level of success with our high speed rail.

Response Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in selecting Alternative 90B as the Preferred Alternative, for reasons outlined in the preceding response. Alternative 90B would also result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter Semler, Dylan

Comment I-549-1 The alternative with 125 MAS distinguishes itself in the following ways:
 * It is the fastest of the remaining alternatives
 * It is the safest of the remaining alternatives
 * It is the only remaining alternative that calls for powering trainsets via electricity along the majority of the trackway
 * It offers the most viable alternative to air travelers between NYC and upstate cities, helping to relieve the congestion of the NYC area airports
 For the reasons stated above, I strongly support the 125 MAS alternative.

Response Thank you for your comments supporting the 125 Alternative and the benefits from high speed rail, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the

costs for the Preferred Alternative). As described in the preceding response, Alternative 90B would also result in the least freight delays and best overall on-time performance for Amtrak service in 2035 of the alternatives considered.

Commenter Semler, Dylan

Comment I-549-2 Section 2.2.2 discusses the current transportation market in the Empire Corridor. For this discussion, the automobile market was only determined based on trips taken over the New York State Thruway (I-90 and I-87). However, for travel between New York City and the three major upstate markets: Syracuse, Rochester, and Buffalo/Niagara Falls, a rational automobile driver would take a route through the southern tier because it is more direct. Therefore these automobile trips are not accounted for in the data presented in this section. While Appendix B acknowledges the limitations to the methodology for determining automobile trips, it does not state the severity of this limitation. Because the New York State Thruway represents a slower *and* costlier travel route, the data presented in Exhibit 2-11 severely understate the automobile market between New York City and Syracuse, Rochester, and Buffalo. At a minimum, this shortfall should be explicitly stated in Section 2.2.2 as well as the caption to Exhibit 2-11. At best, a proper sampling should be attempted in order to accurately determine this market size. As it stands presently, the data not only useless, but actually misleading. There are other ways in which the market is understated in this section. It does not consider trips that start in the Empire Corridor and terminate just outside the corridor, like Toronto, Boston, New Jersey, or Philadelphia, the latter already having very frequent, high speed rail service. The ramifications of this understatement propagate to the ridership and revenue forecasting.

Response Thank you for your comment. Exhibit 2-11 of the Tier 1 DEIS (Exhibit E-4 of the Tier 1 FEIS) was intended to be a conservative estimate of the automobile market for many of the reasons noted in your comment.

Commenter Semler, Dylan

Comment I-549-3 Has the group considered a 125 MAS alternative where the 4 regional Empire Corridor West trains terminate at Syracuse?

Response Thank you for your comments regarding the Alternative 125, which have been considered in the selection of Alternative 90B as the Preferred Alternative. Chapter 3 of the Tier 1 EIS describes the alternatives considered for further study. Alternative 125 includes service in the Empire Corridor West from Albany to Buffalo, including service through Syracuse.

Commenter Semler, Dylan

Comment I-549-4 Section 3.5 of Appendix B speaks of "Appendix 3". Is this Appendix C?
Section 3.3 of Appendix B should be numbered Section 3.2.2
Section 3.2.1 of Appendix B refers to the "Buffalo-Erie Metropolitan Region" Do you mean Buffalo-Niagara Metropolitan Region?

Response Thank you for your comments. Sections 3.2.1, 3.3, 3.5 of Appendix B the Tier 1 EIS document have been reviewed and revised to clarify these references in the document.

Commenter Sennett, John

Comment I-550-1 I support Alternative 110.

Response Thank you for your comments in support of Alternative 110, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternatives 90B and 110 would restore large sections of third and fourth track, but Alternative 90B would constrain more of the additional trackage to the existing right-of-way, substantially reducing costs and impacts.

Commenter	Sexton, Laura
Comment I-551-1	I am for the 125 alternative.
Response	Thank you for your comment supporting the 125 Alternative and the benefits from high speed rail, which has been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).
Commenter	Sexton, Luke
Comment I-552-1	Alternative 125 would best suit the needs of New York
Response	Your comments in support of the High Speed Rail Empire Corridor Program, regarding Alternative 125, have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative, for the reasons outlined in the preceding response. Alternative 90B would also result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Sexton, Luke
Comment I-552-2	I would like to give my support to the high speed rail systems that have been proposed. At least 100 miles per hour.
Response	Thank you for your comments supporting the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B was selected as the Preferred Alternative, as it would add 370 miles of tracks and would constrain more of the additional trackage to the existing right-of-way than Alternatives 110 and 125.
Commenter	Shanebrook, Robert
Comment I-553-1	I have used high speed rail several times in Europe and Asia. I do not think it would be a wise use of resources to pursue high speed rail across New York State this at this time.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Shants, Terry
Comment I-554-1	New York State does not need a high speed train. The cost of running and maintaining a high speed train would be astronomical. For scarcely populated upstate New York, the expense of this project would outweigh any benefit the train would provide. No one has mentioned the ticket prices or the cost of upkeep after the initial project is put into place. Many people take a bus to NYC because it is cheaper than taking the current train. A one hour time difference would not make the high speed train a viable option, considering the added expense. When people travel to Buffalo, they want their cars. The American people like their automobiles. New York wants to spend billions for a train while our cities are in financial trouble, roads are crumbling and need to be widened in some places, bridges need repair and schools are failing. Where is the common sense?

Response	Thank you for your comments, relating to the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Shapp, Mark
Comment I-555-1	So has NYStateDOT finally made its peace with a 90mph maximum?
Response	Thank you for your comments supporting the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.
Commenter	Shapp, Mark
Comment I-555-2	I would be pleased with reliably being to operate across the state at 79! I would be pleased if funding was available only to re-engineer the railroad for the benefit of CSX and Amtrak with re-configured chokepoints and higher crossover speeds at interlockings.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered in the selection of the Preferred Alternative.
Commenter	Shapp, Mark
Comment I-555-3	And what of the bridge over the Seneca River dry bed out at MP320? Maximum authorized speed over that bridge is, I believe, 40mph. Surely NYStateDOT doesn't want 90mph trains to have to reduce to 40mph at MP320.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. The Service Development Plan identifies the Seneca River Bridge Replacement to eliminate the speed restriction as a component project. Elimination of segments of the Empire Corridor that slow train movements has been part of the review process by the FRA and NYSDOT in determining the Preferred Alternative. In Tier 2 assessments, individual projects or groups of projects for the Preferred Alternative will undergo a more detailed evaluation to further advance design.
Commenter	Shapp, Mark
Comment I-555-4	And what of Metro North territory from approximately MP46 to POU? Are there plans to expand track capacity there? If not there is going to be congestion and delays trying to add more Amtrak frequencies.
Response	Your comments on the High Speed Rail Empire Corridor Program have been considered in the selection of the Preferred Alternative. Improvements to the Empire Corridor in Metro-North territory were incorporated as part of Alternative 90A, which is part of the Preferred Alternative. The Tier 1 EIS reviews the operation of multiple tracks, including developing specific track diagrams and modeling and simulation of rail operations to identify the necessary infrastructure projects that will improve travel times and the reliability of service. Details on each of the alternatives being considered can be found in Chapter 3 of the Tier 1 EIS.
Commenter	Shapp, Mark
Comment I-555-5	Also what of upgrading Tk3 between CP72 and CP75? Amtrak sometimes has to go that way when two MNR trains are in the depot and Tk3 is cleared for 30mph only.
Response	Thank you for your comments. A component project of Alternative 90A addresses track upgrades in this area, and the 90A improvements are included in the Preferred Alternative.
Commenter	Shearer, Adam

Comment I-556-1	I feel that adding high-speed railways to New York would be very beneficial to our state.
Response	Thank you for your comments supporting the High Speed Rail Empire Corridor Program and the need for improving rail passenger service on the route, which have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Sheldon, Jerry
Comment I-557-1	<p>As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:</p> <ul style="list-style-type: none"> -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.
Commenter	Sheridan, Jim
Comment I-558-1	Let's have a Livingston Avenue Bridge that does it all.
Response	<p>Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge.</p>
Commenter	Shipherd, Sam

Comment I-559-1	I am enthused to hear that improvements to our rail infrastructure are in discussion. As a resident of Albany, I very much hope for better service out of Albany.
Response	Thank you for your comments supporting the High Speed Rail Empire Corridor Program and for the need for improving rail passenger service on the route, which have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative. The Preferred Alternative will increase the frequency of service and travel times out of Albany.
Commenter	Shipherd, Sam
Comment I-559-2	Also as a resident of Albany, I ask that any updates to the system include provisions for pedestrian and bike access. The Livingstone Avenue Bridge in Albany should be updated to include passage for bikes and pedestrians.
Response	Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge .
Commenter	Shusler, Irene
Comment I-560-1	YES! we need a faster way to get to NYC.
Response	Your comments supporting the High Speed Rail Empire Corridor Program have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Sillars, Rodger James
Comment I-561-1	As a nation we need the leadership of NY in high speed rail and revival of service to Buffalo Central Terminal!
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-557-1.
Commenter	Skill, Lisa
Comment I-562-1	I am voicing my support for the need for a pedestrian/cyclist pathway over the to-be-replaced Livingston Ave. Rail Road Bridge.
Response	Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge .
Commenter	Skompinski, Carl B.
Comment I-563-1	I would like to argue for Buffalo's Central Terminal to be a stop along the HS Rail line. The \$1.5M identified for improvements does not do the station justice - so why spend a penny on it. Buffalo needs a signature terminal. here is discussions in the community to

extend light rail to Buffalo's Airport, which would run to Buffalo's Central Terminal. There is also community discussion on revamping a commuter rail loop "The Belt Line" to loop to various part of the city. All three line - High Speed, Airport Extension, and The Belt Line all come together at Buffalo's Central Terminal. SO it's a natural place to place the terminal.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment 557-1.

Commenter Skompinski, Carl B.

Comment I-563-2 I am in support of High Speed Rail through NYS although I think that speeds of 110/125 are not going to cut it for modern travel.

Response Thank you for your comments regarding the High Speed Rail, Empire Corridor Program. During the selection of the alternatives for review in the Tier 1 EIS, it was determined that the focus would be on a range of options, with trains operating at 90, 110 and 125 miles per hour. It was determined that operating trains at higher speeds would have greater impact on the environment, require more financial investment to construct and require more public resources to operate. Comments from the public, relating to the different service alternatives, have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B was selected as the Preferred Alternative, as it would add 370 miles of tracks and would constrain more of the additional trackage to the existing right-of-way than Alternatives 110 and 125.

Commenter Skompinski, Carl B.

Comment I-563-3 The plan needs to eliminate the Depew station and move gates to Buffalo's Central Terminal.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment 557-1.

Commenter Skowron, Frank

Comment I-564-1 I am disappointed in the fact that the 125 Plan does not have an option to stop in Utica, my hometown. With the NanoCenter opening in the near future a 125 option to go from Utica to Albany would be a nice option but given the est. price of the 125 option the 90B option seems to be the best value.

Response Your comments about preserving and offering intercity rail passenger service for the City of Utica have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was designed to help cut the distance between Albany and Syracuse by 14 miles, but one of the major drawbacks of this route is that it passes to the south of the stations on the current Empire Corridor in the Mohawk Valley between Syracuse and Albany. Therefore, 125 express service would not serve Rome, Utica, Amsterdam and Schenectady. The Preferred Alternative, Alternative 90B, was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance. As discussed in Chapter 3 of the Tier 1 EIS, the Preferred Alternative would increase service to Utica (doubling the frequency).

Commenter Smcarelli, (No First Name)

Comment I-565-1	High speed magnetic tubes should be the future of NY transportation. Please do some research on it before we spend 14B to move in the wrong direction
Response	Thank you for your comments on the High Speed Rail Empire Corridor Tier 1 EIS. In reviewing the types of technologies to be used in providing the service, the focus was on using systems that would allow for connecting with the existing rail network, and development that was within possible funding levels and time constraints for construction. During the selection of the alternatives for review in the Tier 1 EIS, alternatives with speeds of 160 mph and 220 mph were considered but not advanced. It was determined that the range of options advanced would be those with trains operating at 90, 110 and 125 miles per hour. It was determined that operating trains at higher speeds would have greater impact on the environment, require more financial investment to construct and require more public resources to operate. Comments from the public have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.
Commenter	Smietana, Sophie
Comment I-566-1	The Central Terminal is ideal.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment 557-1.
Commenter	Smigelski, Casey
Comment I-567-1	As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons: -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment 557-1.
Commenter	Smith, David C.
Comment I-568-1	The absolute test of long term success is speed and the creation of a system that will be built with the ability to incrementally upgrade speeds over time. Building anything less than that will not serve the long term interests of NY State.

Response	Thank you for your comments, supporting the program, which have been considered by the FRA and NYSDOT in selecting the Preferred Alternative. The selection of the Preferred Alternative included consideration of constructability, and one of the advantages of Alternative 90B is that more of the additional trackage is constrained to the existing right-of-way (than Alternatives 110 or 125) and benefits can accrue within 2 to 5 years of the start of construction. The program schedule is outlined in the Service Development Plan, and building individual segments and supporting infrastructure, based on identification of funding and other factors, may follow an incremental approach to bringing the program into revenue service.
Commenter	Smith, David C.
Comment I-568-2	The biggest problem will be the opposition that will emerge and potentially delay construction until the proposed level of service is already dated technology. We could never build the Transcontinental Railroad today with all of the NIMBY's.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. Comments from the public have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Smith, David C.
Comment I-568-3	Please consider a stop in Wayne County too, because it is on the longest stretch of the Empire Corridor without a station.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. At this time, the program focuses on improving intercity rail passenger service along the Empire Corridor between New York City and Niagara Falls, using existing stations. Adding stations to the route could be part of future studies for expanding service beyond the current area outlined in the Tier 1 EIS.
Commenter	Smith, Max
Comment I-569-1	My name is Max Smith and I believe we need to save the section of the Adirondack Scenic Railroad between Big Moose and Saranac Lake. Many people who snow mobile and hike through the Adirondacks want to rip up the tracks and turn it into a hiking trail. We need to save the tracks because it is the only route through the heart of the Adirondacks. Also the scenery is beautiful. The line was busy during the 1980 Winter Olympics bringing people to and from Lake Placid.
Response	Thank you for your comments on the HSR Empire Corridor Program. The program considers improvement alternatives for the Empire Corridor between New York City and Albany and Albany to Niagara Falls. Improvements in Empire Service would also improve service on regional lines that use the same trackage, such as Amtrak's Adirondack Line. However, the Adirondack Scenic Railroad, a separate right of way, would not follow the areas outlined in the program and does not service the same cities as the Empire Corridor. Utica's train station has been extensively restored in partnership with Oneida County, and recently had an additional platform constructed on the westbound side that also provides connections with the Adirondack Scenic Railroad.
Commenter	Smith, Max
Comment I-569-2	Another thing we should save the line because the Saranac and North Creek Railroad would allow us to run their passenger cars through the area such as dome and sleeper cars. The Saranac & North Creek operates out of Saranac Lake and it will be nice for them to help us to run trains to and from Saranac Lake. If the tracks get ripped up, it will ruin our history and business. Save the railroad!

Response	Thank you for your comments. The purpose of the High Speed Rail Empire Corridor Program is to introduce higher passenger train speeds on the Empire Corridor between New York City and Niagara Falls. However, the Adirondack Scenic Railroad, a separate right of way, would not follow the areas outlined in the program and does not service the same cities as the Empire Corridor.
Commenter	Smith, Max
Comment I-569-3	My name is Max Smith and I believe we need high speed rail service in New York State.
Response	Thank you for your comments in support on the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Smith, Max
Comment I-569-4	we need a high speed rail system to replace the turboliners that is safer, fast, and environment friendly. Also, there is no overnight passenger train that runs between Albany and Niagara Falls except for Amtrak train 49 "Lake Shore Limited." Amtrak used to run train 65 and 66 an overnight train of "Maple Leaf" but due to lack of ridership, train 65 and 66 were eliminated many years ago. If we have an overnight high speed train, we should have sleeping cars.
Response	Thank you for your comments regarding overnight train service needs on the Empire Corridor. Comments, for improvements to the service, have been considered in the development of the Service Development Plan for the Empire Corridor High Speed Rail Program and the selection of the Preferred Alternative. Operating timetables will be examined in further detail in the Tier 2 assessments.
Commenter	Tanti, Carol
Comment I-570-1	I'm interested in, you know, having trains that are going west that have, west of Albany, that have the same potential that we can make a day trip to another city and then come home in the same day.
Response	Your comments regarding schedules and travel times have been considered in the development of the Service Development Plan. Although final future timetables have not been determined, Appendix D of the Tier 1 EIS provides simulated future timetables for each of the program alternatives. A day trip from Albany to western cities within the state was examined in the Service Development Plan developed for the Preferred Alternative. Operating timetables will be examined in further detail in the Tier 2 assessments.
Commenter	Smith, Robert
Comment I-571-1	only the Base MAS is reasonable and necessary at this time.
Response	Thank you for your comments in the support of the Base Alternative. Operating benefits, capital requirements and responsiveness to passenger needs have been part of the criteria used for the FRA and NYSDOT to select the Preferred Alternative.
Commenter	Smith, Robert
Comment I-571-2	I would love to see 90A or B but the cost not only to build these and to operate them precludes there adoption, given the poor state of NY's economy at present and presumably in the near and far future.

Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 EIS. In selecting Alternative 90B as the Preferred Alternative for the High Speed Rail Empire Corridor Program, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and environmental impacts.
Commenter	Smith, Stephen
Comment I-572-1	I vote for option 110 it seems the best value although its has potential for high adverse affects for the "historic" impact area. It would be good to try to avoid as many adverse affects to that area as possible.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered in selecting Alternative 90B as the Preferred Alternative. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Because of the required property acquisitions, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance.
Commenter	Smithling, Cody
Comment I-573-1	Let me just start by saying that the 125 MPH should be out of the question. Not only would it require more money to build a whole new line, but it would go around the city of Utica.
Response	Your comments about preserving and offering intercity rail passenger service for the City of Utica have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was designed to help cut the distance between Albany and Syracuse by 14 miles, but one of the major drawbacks of this route is that it passes to the south of the stations on the current Empire Corridor in the Mohawk Valley between Syracuse and Albany. Therefore, 125 express service would not serve Rome, Utica, Amsterdam and Schenectady. Alternative 90B was selected over Alternatives 110 and 125, based on its substantially lower costs, impacts, and its performance, and would increase service to Utica, as discussed in Chapter 3 of the Tier 1 EIS.
Commenter	Smithling, Cody
Comment I-573-2	The economy of the Utica/Rome area is already on the rebound. With new drone jobs at Griffiss International and Nano technology jobs coming to the area, investors or outside business partners from NYC would most likely love the ability to travel on high speed rail rather than paying a ton of money for airlines. Union Station is also Utica's only primary transportation connection to other cities in the state. The closest airport that offers an opportunity for civilians to travel outside of CNY is Hancock International in Syracuse. I am in high favor of any resolution that includes Utica as a stop on the new high speed rail line.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, relating to preserving and providing train service for the cities of Utica and Rome, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As outlined in the preceding response, Alternative 90B would improve the frequency of service to Utica and Rome, unlike Alternative 125, which would not provide express service to these cities.
Commenter	Smith, Wayne
Comment I-574-1	I believe the 125 option would be the best solution to help entice people out of planes and on to trains.

Response	Thank you for providing your comments on the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. Alternative 90B was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance, as described in the preceding responses.
Commenter	Snodgrass, Randall
Comment I-575-1	<p>As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:</p> <ul style="list-style-type: none"> -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	<p>Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.</p>
Commenter	Soman, Sheldon
Comment I-576-1	If we are going to spend money on high speed rail, it makes sense to go for the highest speed possible. We should try to have the 125 mph speed
Response	Your comments in support of the High Speed Rail Empire Corridor Program have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).
Commenter	Soman, Sheldon
Comment I-576-2	I am in favor of the NYS High Speed rail improvements. The plan looks great

Response	Thank you for your comments supporting the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Sopchak, Carl
Comment I-577-1	I don't see the 125 MPH Option worth the cost
Response	Thank you for your comments concerning the 125 Alternative, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.
Commenter	Sopchak, Carl
Comment I-577-2	Looking at the options, IMHO, that line is drawn after the 90 MPH Option A - and maybe even after the Base Option. The difference in cost of these options seems extremely large for the minor incremental benefit.
Response	Thank you for your comments. Economic costs and benefits of each alternative, for the High Speed Rail Empire Corridor Program, have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Chapters 5 and 6 of the Tier 1 EIS describe the costs and benefits of the program alternatives.
Commenter	Spadafore, Mark
Comment I-578-1	I would encourage all regulatory bodies to not only do the improvements for higher speed rail, but to look at installing "mag lev" tracks across Upstate.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Tier 1 EIS. In reviewing the types of technologies to be used in providing the service, the focus was on using systems that would allow for connecting with the existing rail network, and development that was within possible funding levels and time constraints for construction. During the selection of the alternatives for review in the Tier 1 EIS, alternatives with speeds of 160 mph and 220 mph were considered but not advanced. It was determined that the range of options advanced would be those with trains operating at 90, 110 and 125 miles per hour. It was determined that operating trains at higher speeds would have greater impact on the environment, require more financial investment to construct and require more public resources to operate. Comments from the public, relating to the different service alternatives, have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.
Commenter	Spula, Jack Bradigan
Comment I-579-1	I strongly favor "Alternative 125." This plan offers both the best, fastest service of all the alternatives under consideration, and it also literally lays the groundwork for eventual development of ~200 mph service with state-of-the-art equipment. Do not take this as my rejecting Alternatives 90A. 90B or 100, however. There's no doubt we must move beyond the status quo and seriously upgrade passenger rail across New York State. But we should aim for the highest level of service possible.
Response	Thank you for your comments supporting the 125 Alternative and the benefits from high speed rail, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. For the reasons outlined above, very high speed rail was dismissed from consideration in the Tier 1 EIS. Alternative 125 was dismissed from further consideration, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).
Commenter	Stadler, Rebecca

Comment I-580-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

- The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
- The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
- The Terminal is centrally located within a two-mile radius of city-center
- The Terminal also has secure parking facilities for up to 450 vehicles
- The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
- The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment 575-1.

Commenter Staley, Bian

Comment I-581-1 How can the NYS DOT hope to maintain a high speed rail line when you can't keep Route 8 or Rt 28 or Rt 12 in decent shape? We have THOUSANDS of bridges that are crumbling, wouldn't the money be better spent fixing what we already have?
No way, no high speed rail, Not in this New York.

Response Thank you for your comments on the Empire Corridor Program. In selecting the Preferred Alternative, the program cost and public investment have been considered by the FRA and NYSDOT.

Commenter Stamm, Corina

Comment I-582-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

- The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
- The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
- The Terminal is centrally located within a two-mile radius of city-center
- The Terminal also has secure parking facilities for up to 450 vehicles
- The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
- The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with

	evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-575-1.
Commenter	Stanlis, Ingrid
Comment I-583-1	Although the fastest option will cost the most, I strongly support the fastest option.
Response	Thank you for your comments, relating to Alternative 125, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. Alternative 125 was dismissed from further consideration, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).
Commenter	Stark, Barry E.
Comment I-584-1	<p>As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:</p> <ul style="list-style-type: none"> -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.
Commenter	Stevens, Marty
Comment I-585-1	Buffalo needs to utilize the Central Station to get it back to its original beauty and stature. The High Speed Rail would be a fantastic solution to utilization.

Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the prior response.
Commenter	Stewart, Jr., Robert J.
Comment I-586-1	Yeah, I'd be willing to spend a little bit more in my taxes for this imperative project!!
Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Stieger, Matt
Comment I-587-1	<p>As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:</p> <ul style="list-style-type: none"> -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-584-1.
Commenter	Stimmer, Jonathan
Comment I-588-1	It is 2014, let's build a high speed rail system in New York.
Response	Thank you for your comments supporting the High Speed Rail Empire Corridor Program and for the need for improving rail passenger service on the route, which have been considered in the selection of the Preferred Alternative.
Commenter	Stimmer, Jonathan
Comment I-588-2	<p>You probably already guessed that I am living in Japan. Japan in many ways is the gold standard for high speed rail everywhere. The Bullet Train or JR Shinkansen as it is known here in Japan; is both profitable and efficient.</p> <p>It is much safer than road traffic. In more than 50 years of operation, not a single person has perished on the Shinkansen in a train crash -- in a country that experiences thousands of earthquakes every year.</p>

Response	Your comments supporting the High Speed Rail Empire Corridor Program have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Stimmer, Jonathan
Comment I-588-3	I say, go all the way, and build a maglev. At least build an experimental track over a short distance.
Response	Thank you for your comment on the High Speed Rail Empire Corridor Tier 1 EIS. In reviewing the types of technologies to be used in providing the service, the focus was on using systems that would allow for connecting with the existing rail network, and development that was within possible funding levels and time constraints for construction. Comments from the public, relating to the different service alternatives, have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.
Commenter	Stimmer, Jonathan
Comment I-588-4	I have read the plans for the upgrading of NY State to high speed rail. Go for it. Even at 125 mph, we are already behind the rest of the world.
Response	Thank you for your comments supporting the High Speed Rail Empire Corridor Program and the need for improving rail passenger service on the route, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was dismissed from further consideration, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).
Commenter	Stimmer, Jonathan
Comment I-588-5	But having a maximum speed of 125 mph in the Empire Corridor is better than what we have today.
Response	Thank you for your comments, relating to Alternative 125, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative, for the reasons outlined in the preceding response. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Stockman, Mark, Emergency Relief Unit, Local Programs Bureau, NYS Department of Transportation, Emergency Relief Unit, Local Programs Bureau, NYS Department of Transportation
Comment I-589-1	Has any consideration been given to purchasing the mainline tracks of CSX' Mohawk, Rochester and Niagara subdivisions as part of the project? Dedicated passenger tracks would be in the center of the corridor as previous rather than to one side. Minimum track centers could be based on FRA regulations and not CSX mandates. Construction could be done by competitive bid rather than CSX force account. a. Fund purchase through bonds issued by a State Rail Authority (similar to STERA) secured by the value of the corridor and by future trackage rights revenues b. Use trackage rights revenues from Amtrak and freight railroads to fund the debt service, operation and maintenance of the corridor. c. Offset the property tax impact to municipalities with PILOT payments, phasing them out over a 10 or 20 year period.
Response	Thank you for providing your comments. The Tier 1 EIS evaluates the range of alternatives to optimize rail operations along the Empire Corridor, and the Preferred Alternative will add approximately 370 miles of additional trackage largely within the existing right-of-way

	to better segregate passenger and freight rail. The purpose of the High Speed Rail Empire Corridor Program is to improve intercity rail passenger service in New York State through infrastructure investments and operational improvements.
Commenter	Stockman, Mark, Emergency Relief Unit, Local Programs Bureau, NYS Department of Transportation, Emergency Relief Unit, Local Programs Bureau, NYS Department of Transportation
Comment I-589-2	Has a change of locomotive for through trains at Albany-Rensselaer been considered? This would free up additional (3,200 hp) P32AC-DM dual-mode locomotives for increased service on the Empire Corridor South, and allow use of Amtrak's 4,200 hp P42DC units West, East and North of Albany-Rensselaer. When future replacement locomotives or trainsets are ordered, this would require the purchase of fewer of the more expensive and complex dual-mode units, reducing capital and operating costs.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. The acquisition of trainsets/locomotives and coaches to support service expansion is addressed in the Service Development Plan. Equipment needs would be further refined as part of Tier 2 assessments.
Commenter	Stockman, Mark, Emergency Relief Unit, Local Programs Bureau, NYS Department of Transportation, Emergency Relief Unit, Local Programs Bureau, NYS Department of Transportation
Comment I-589-3	Why was electric traction selected for the rejected 125 mph alternative on the existing corridor? Capital and O&M costs for electrification are staggering! Restored passenger tracks on the corridor can be constructed to FRA class 7 (geometry permitting) if Barrier Gates are used at level crossings. Technology to operate conventional diesel-electric trains at 125 mph service speeds has existed since at least 1976. Bombardier and Talgo have FRA Tier II compliant designs ready to go into production, and Siemens (in partnership with Cummins engines) is developing a new 125 mph locomotive for Illinois DOT.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, relating to the types of equipment to be operated, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Your suggestion to use electric power for operating the trains would be achieved by Alternative 125, which was dismissed from further consideration in the Tier 1 FEIS. The Preferred Alternative, Alternative 90B, was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance.
Commenter	Stockman, Mark, Emergency Relief Unit, Local Programs Bureau, NYS Department of Transportation, Emergency Relief Unit, Local Programs Bureau, NYS Department of Transportation
Comment I-589-4	For Alternative 125, if a dedicated, grade-separated ROW and electrification are proposed, what makes the 160 mph alternative over \$12 billion more than the 125 mph alternative when the infrastructure is virtually identical? And why is the 220 mph alternative another \$12 billion above the 160 mph alternative?
Response	Your comments regarding alternative cost and selections have been considered in the selection of Alternative 90B as the Preferred Alternative. In developing the alternatives outlined in the Tier 1 EIS for the High Speed Rail Empire Corridor Program, cost estimates were determined on the engineering and infrastructure that were required to support each alternative. For the 160 mph and 220 mph MAS alternatives, between Albany-Rensselaer and New York City, there would be an entirely new station and market configuration, with construction of new right-of-way on a viaduct structure aligned with existing highways (assumed to be I-87/NY State Thruway). Physical and environmental characteristics of the existing Empire Corridor South would result in either extraordinary encroachments and

	impacts or a diversion so far to the east as to fall outside the Empire Corridor as defined. The Very High Speed (VHS) alternatives were rejected for their extremely high costs (nearly triple the next costly alternative)– due to the likelihood of significant community and environmental impacts and the significant engineering design difficulties necessary to create a sufficiently straight track alignment to permit these speeds. Details on the cost of each of the alternatives considered can be found in Chapter 3 of the Tier 1 EIS.
Commenter	Stockman, Mark, Emergency Relief Unit, Local Programs Bureau, NYS Department of Transportation, Emergency Relief Unit, Local Programs Bureau, NYS Department of Transportation
Comment I-589-5	Please reconsider a 125 mph alternative on the existing corridor, based on State ownership, without electrification. Excluding the purchase price of the Corridor, capital costs should be incrementally higher (say 10%) than Alternative 110, or about \$68 billion. O&M costs would likely increase similarly- approx. \$190 million. If revenues follow the pattern, then the operating deficit would only be approx. \$26.4m compared to \$59m for the current Alternative 125.
Response	Your comments have been considered by the FRA and NYSDOT in selecting Alternative 90B as the Preferred Alternative. In developing the engineering criteria for operating at 125 miles per hour, it was determined that the current alignment used by the existing service on CSX Transportation right of way was not acceptable. It was also determined that the engineering requirements for 125 mile per hour operation would have significant environmental impacts on the communities along the route and that the 125 alternative should be developed on a new alignment in many locations between Albany and Buffalo.
Commenter	Stockman, Mark, Emergency Relief Unit, Local Programs Bureau, NYS Department of Transportation, Emergency Relief Unit, Local Programs Bureau, NYS Department of Transportation
Comment I-589-6	Use Barrier Gates in normally closed mode to secure low-traffic private crossings. The gates will only open upon request to the Rail Dispatcher. For higher traffic private crossings (as to an industry) consider normally open Barrier Gates, or possibly normally open during business hours and normally closed at all other times.
Response	Thank you for your comments regarding grade crossing safety and operations. Section 2.6. Safety Considerations, and Appendix E, Section 3.3.4 Grade Crossings discuss safety and grade crossings. Rail operations at individual crossings will be further reviewed in Tier 2 assessments for the program, as individual projects are further developed for constructability.
Commenter	Stockman, Mark, Emergency Relief Unit, Local Programs Bureau, NYS Department of Transportation, Emergency Relief Unit, Local Programs Bureau, NYS Department of Transportation
Comment I-589-7	Use existing Defect Detector technology to ensure safe operation of freight and high-speed passenger service on FRA minimum track separation. To maximize corridor capacity, consider allowing fast Intermodal freights to share the passenger tracks, if capable of maintaining a 60 mph minimum speed and traversing increased super elevation on curves.
Response	Thank you for your comments. Rail operations along the Empire Corridor on Metro North Railroad, Amtrak and CSX Transportation are already protected by a variety of defect detectors to inspect the trains for dragging equipment and other wheel and axle irregularities.
Commenter	Stockman, Mark, Emergency Relief Unit, Local Programs Bureau, NYS Department of Transportation, Emergency Relief Unit, Local Programs Bureau, NYS Department of Transportation

Comment I-589-8	Initially, upgrade entire corridor to 3 or 4 bi-directional tracks, with PTC signaling, freight tracks engineered to FRA class 5 and passenger tracks engineered to FRA class 6 and 7 where practical. This will allow use of current Amtrak equipment at its full potential of 110 mph. Next, make incremental improvements to the corridor, eliminating speed restrictions, capacity constraints, points of conflict, and improving both freight and passenger performance. Finally, when 125 mph passenger equipment becomes available, upgrade crossings to Barrier Gates to allow operation at Class 7 speeds (125 mph.)
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered in selection of Alternative 90B as the Preferred Alternative. Alternatives 90B and 110 would restore large sections of third and fourth track, but Alternative 90B would constrain more of the additional trackage to the existing right-of-way, substantially reducing costs and impacts. The 125 alternative includes creating new trackage on a new alignment for much of the route west of Albany and was dismissed due to higher costs and impacts. Diagrams of the installation of additional trackage is shown in Appendix A (Volume 2) of the Tier 1 EIS for each of the alternatives.
Commenter	Stokes, Belle Louise
Comment I-590-1	Will comment on plans when have gathered thoughts, but do agree need to plan for world-standard high speeds, dedicated passenger rails + integrated systems + CENTRAL TERMINAL as Buffalo hub!
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.
Commenter	Stowe, Richard
Comment I-591-1	Please consider siting a train station in Albany north of downtown and the State Capitol Design it as a last mile station that is walkable and bikeable. Include bike share.
Response	Thank you for your comment regarding a new station in Albany. The Tier 1 EIS for the High Speed Rail Empire Corridor Program is a corridor-level evaluation that considers use of the existing stations. The inclusion of additional stations or expanded pedestrian/bicycle access along the Empire Corridor could be part of future studies for expanding service.
Commenter	Stowe, Richard
Comment I-591-2	Please include bike (bicycle) parking in the new train sets that are procured for improvements HSRECP.

Response	Your comments, relating to the accessibility of bicycles on trains operated in the future, has been considered as part of the review process for the Tier 1 EIS. Currently, bicycles can be accommodated on the Empire Corridor, but require separate ticketing Individual projects, or groups of projects, will undergo a second evaluation (Tier 2) to further advance the design for that project, or group of projects including looking at options for pedestrian/bicycle accommodations.
Commenter	Stowe, Richard
Comment I-591-3	I support the 110 mph alternative.
Response	Thank you for your comments supporting the 110 Alternative, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Because of the required property acquisitions, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance.
Commenter	Stuczynski, Ken JP
Comment I-592-1	If Buffalo is to be part of the high-speed rail system, I sincerely hope the Buffalo Central Terminal (old NYCT) will be a part of it.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the need for station improvements in Buffalo, New York. Improvement to the passenger rail facilities in the City of Buffalo, including a new station development at Buffalo-Exchange Street and updates at the Buffalo-Depew Station, are discussed in the response to Comment I-590-1.
Commenter	Sullivan, E.B.
Comment I-593-1	As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons: -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the need for station improvements in Buffalo, New York. Improvement to the passenger rail facilities in the City of Buffalo, including a new station development at Buffalo-Exchange Street and updates at the Buffalo-Depew Station, are discussed in the response to Comment I-590-1.
Commenter	Sullivan, Susan

Comment I-594-1	I am so in favor of this. Albany needs this!
Response	Thank you for comments in support of the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in selecting the Preferred Alternative.
Commenter	Sunser, Penny
Comment I-595-1	Just a quick note to say how very much I oppose the High Speed Rail proposal.
Response	Comments from the public on the High Speed Rail Empire Corridor Program have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 EIS.
Commenter	Sweat, Laura
Comment I-596-1	<p>As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:</p> <ul style="list-style-type: none"> -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-590-1.
Commenter	Sweeney, Cameron, D.S. Ray Middle School, D.S. Ray Middle School
Comment I-597-1	I think that the High Speed Rail would not be a great idea. I think this because all of the options range from \$390 million to \$14.71 billion. New York state is in major debt.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 EIS.
Commenter	Sweeney, Cameron, D.S. Ray Middle School, D.S. Ray Middle School
Comment I-597-2	I understand that the "No Build" alternative includes the option called "Base Alternative" and that this includes 8 projects that have already been approved and started. This option is costing NYS 290 million dollars. I think it is financially irresponsible for NYS to spend all of this money.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. The Base Alternative includes eight projects that have either been built or are under construction

that address previously identified capacity constraints. Individual projects, or groups of projects for the Preferred Alternative, will undergo a second evaluation (Tier 2) to further advance the design for that project, or group of projects.

Commenter Sweeney, Cameron, D.S. Ray Middle School, D.S. Ray Middle School

Comment I-597-3 Another reason that the High Speed rail is not a good idea is for environmental reasons.

Response Thank you for commenting on High Speed Rail Empire Corridor Program. Social, economic and environmental factors have all been considered by the FRA and NYSDOT in selecting the Preferred Alternative. In selecting Alternative 90B as the Preferred Alternative for the High Speed Rail Empire Corridor Program, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts. The net annual operational benefits for the Preferred Alternative would be roughly equivalent to eliminating the emissions associated with the energy and electricity consumption of 2,500 to 4,200 average U.S. single family homes every year.

Commenter Swift, Adam

Comment I-598-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

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- The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
- The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter Szczupak, Anne

Comment I-599-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:
 -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
 -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
 -The Terminal is centrally located within a two-mile radius of city-center
 -The Terminal also has secure parking facilities for up to 450 vehicles
 -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
 -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the prior response.

Commenter Taibi, John

Comment I-600-1 Of the four Alternatives most relevant, 90A, 90B, 110, and 125, I cannot agree with E.S.P.A. in thinking that Alternative 110 is the superior proposal. Rather, I believe that it adds too little improvement over Alternative 90B so that the meager benefit does not offset its extra expense of (roughly) \$750,000 million.

Response Thank you for your comment, relating to alternative selection, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.

Commenter Taibi, John

Comment I-600-2 I really feel that Alternative 125 is the best proposal, mainly because it offers the highest MAS, the highest average speed, and because its trains would be electrically propelled on Corridor West.

Response Thank you for your comments supporting the 125 Alternative and the benefits from high speed rail. Your suggestion to use electric power for operating the trains would be achieved by Alternative 125, which was dismissed from further consideration in the Tier 1 FEIS. The Preferred Alternative, Alternative 90B, was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. Alternative 90B would add 370 miles of tracks and would constrain more of the additional trackage to the existing right-of-way than Alternative 125.

Commenter Taibi, John

Comment I-600-3 Might it be advisable to subtract one or two trains from the 15 proposed to run on the 125mph new corridor and add them to the existing corridor so that some degree of improved scheduling may be afforded Schenectady, Amsterdam, Utica, and Rome?

Response Your comments regarding train service on the Empire Corridor have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.

Unlike the 125 express service, which would bypass existing stations at Schenectady, Amsterdam, Rome, Utica, and Buffalo-Depew, Alternative 90B will improve service to these existing stations.

Commenter Taibi, John

Comment I-600-4 If the subtracting and adding of trains is not an alternative, might it then be possible to consider that along the new Albany-Syracuse corridor an “intermediate” stop be considered.

Response Thank you for your comments. As addressed in the preceding response, Alternative 125 has been dismissed from further consideration. The Preferred Alternative, Alternative 90B, would improve frequency of service to existing stations, particularly west of Albany where frequency would roughly double. Alignments, physical improvements, and service frequency for each of the program alternatives are discussed in Chapter 3 of the Tier 1 EIS.

Commenter Taibi, John

Comment I-600-5 In consideration of the route proposed for construction of the Alternative 125 West corridor, I wonder if any thought had been given, or study undertaken, in the route of the abandoned ex-West Shore Railroad that had at one time run from (south of) Albany to Buffalo. Its right-of-way is still mostly unused, and it also runs in a closer proximity to the cities that your proposed 125 corridor bypasses.

Response Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative). The West Shore Railroad right of way, in many locations, has been redeveloped for other uses and is still utilized by CSXT in the Rochester area. It does not offer access to Albany-Rensselaer Station or a direct connection to Manhattan.

Commenter Taibi, John

Comment I-600-6 I also feel that a “second look” may be in order for Alternative 160, which NYSDOT had initially ruled out due to its high environmental impact and prohibitive cost (\$37 Billion).

Response Thank you for your comments. The Tier 1 EIS for the High Speed Rail Empire Corridor Program focused on studying alternatives using systems that would allow for connecting with the existing rail network. During the selection of the alternatives for review in the Tier 1 EIS, alternatives with speeds of 160 mph and 220 mph were considered but not advanced. It was determined that the focus would be on a range of options with trains operating at 90, 110 and 125 miles per hour. It was determined that operating trains at higher speeds would have greater impact on the environment, require more financial investment to construct and require more public resources to operate. Comments from the public, relating to the different service alternatives, have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.

Commenter Taibi, John

Comment I-600-7 Lastly, in your Alternative 125 portion of the program one of the maps shown located Utica lying to the west of Rome. I’m sure this was an oversight and that you know, in actuality, it lies to the east.

Response	Thank you for your observation. The presentation will be reviewed and revised as necessary to reflect any corrections in the geographical location of stations along the Empire Corridor.
Commenter	Tanck, Carol
Comment I-601-1	Please drop the high speed rail project.
Response	Comments from the public on the High Speed Rail Empire Corridor Program have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 EIS.
Commenter	Tanck, Ron
Comment I-602-1	Please drop this ridiculous project before another penny is wasted.
Response	Comments from the public on the High Speed Rail Empire Corridor Program have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 EIS.
Commenter	Taylor, Charles
Comment I-603-1	<p>As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:</p> <ul style="list-style-type: none"> -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the need for station improvements in Buffalo, New York. Improvement to the passenger rail facilities in the City of Buffalo, including a new station development at Buffalo-Exchange Street and updates at the Buffalo-Depew Station, are discussed in the response to Comment I-598-1.
Commenter	Taylor, Elizabeth
Comment I-604-1	I am concerned that the proposed high speed rail corridor would negatively affect business operations.
Response	Thank you for your comments on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program. Alternative 90B, the Preferred Alternative, would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would double the frequency of service on Empire Corridor West. Alternative 90B would also involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. In the Tier 1 EIS, Chapters 3 and 4 discuss the positive impacts of the program. Specifically, Section 4.3, Regional Population and Employment, and Business Districts,

discusses how the program will create employment opportunities and support the labor markets in the regions served by the improved rail service.

Commenter Taylor, Elizabeth

Comment I-604-2 I encourage the selection of the base alternative to maintain our ability to easily use and rely on the freight rail network for safe, reliable and efficient service. The proposed 90A, 90B, and 110 alternatives put forth in the DEIS commingle freight and high speed rail, significantly constraining freight rail operations.

Response Thank you for your comments, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. As noted in the prior responses, the addition of dedicated third and fourth tracks along Empire Corridor where freight operations are heaviest will represent an improvement in freight operations, compared to the Base Alternative.

Commenter Tedesco, Greg

Comment I-605-1 I am so excited about the potential for high speed rail in NY! I am not sure if you are aware but there is a perfect property and complex to re use and make into a wonderful train station, it is called the bUffalo Central terminal. No need to build a new facility just restore an already built beautiful historical building!

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter Terenzetti, Terry

Comment I-606-1 Please ensure that the High-Speed Rail stops in UTICA
PLEASE DO NOT EXCLUDE THE UTICA-ROME AREA AND THE MOHAWK VALLEY FROM A DIRECT STOP ON THE HIGH-SPEED RAIL, REGARDLESS OF THE TRAINS SPEED.

Response Your comments about preserving and offering intercity rail passenger service for the City of Utica have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was designed to help cut the distance between Albany and Syracuse by 14 miles, but one of the major drawbacks of this route is that it passes to the south of the stations on the current Empire Corridor in the Mohawk Valley between Syracuse and Albany. Therefore, 125 express service would not serve Rome, Utica, Amsterdam, and Schenectady. Alternative 90B was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance, and would increase service to Utica, as discussed in Chapter 3 of the Tier 1 EIS.

Commenter Terrana, Tammy L.

Comment I-607-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

- The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
- The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
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- The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-605-1.

Commenter Terry, Carol

Comment I-608-1 I am fully in favor of anything to improve the rail service in NY State. I frequently travel via rail from Syracuse to NYC. I would like to utilize the system more – it needs improvement – especially from Syr. To Albany

Response Thank you for your comments supporting the High Speed Rail Empire Corridor Program and the need for improving rail passenger service on the route, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B would substantially increase the frequency of service west of Albany. This alternative would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter Teter, Edward and Barbara

Comment I-609-1 As a NY State taxpayer I fully support proposal #125 to drastically improve the Empire Corridor.

Response Thank you for your comments supporting the 125 Alternative and the benefits from high speed rail, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative). Alternative 90B would involve less right-of-way and environmental impacts than Alternative 125, while improving passenger and freight operations as described in the preceding response.

Commenter Thomas, Erin

Comment I-610-1 Please consider the value of the walk/bike component of the community

Response Thank you for your comment regarding pedestrian and bicycle access. Currently, bicycles can be accommodated on the Empire Corridor, but require separate ticketing. Comments

from the public, relating to the accessibility of bicycles and pedestrians, have been considered in the design of station facilities and other facilities constructed as separate projects along the route and in the Tier 1 assessments for Empire Corridor. Individual projects, or groups of projects, will undergo a second evaluation (Tier 2) to further advance design for that project, or group of projects including looking at options for pedestrian/bicycle accommodations.

Commenter Thompson, Ted

Comment I-611-1 Double-tracking between Albany and Schenectady is vital.

Response Thank you for your comment regarding the need for multiple tracks between Albany and Schenectady. Additional trackage has been installed as part of the Albany-Schenectady Double Track Project, part of the Base Alternative.

Commenter Thompson, Ted

Comment I-611-2 There is essentially no demand for high speed travel between Buffalo and Albany as witnessed by the absence of direct air service.

Response Thank you for your comments on High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 EIS. Currently, at least three major airlines provide air service between Albany and Buffalo, and this had been the fastest growing segment for rail ridership historically, as measured as a percentage of overall growth.

Commenter Thompson, Ted

Comment I-611-3 while improved Amtrak service between city pairs by judicious upgrades to trackage and signaling (as well as the provision of Wi-Fi on the trains) would seem justifiable, I question whether billions in improved rail passenger service between Albany and Buffalo can be justified.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in selecting the Preferred Alternative.

Commenter Thompson, Ted

Comment I-611-4 Therefore, I am comfortable up to Alternative 90A with 90B a consideration for future years if improved ridership justifies the additional cost.

Response Thank you for your comments in support of Alternative 90A, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. The Alternative 90A improvements are incorporated into the Preferred Alternative.

Commenter Thurgs, J.

Comment I-612-1 In favor of the 110. Need to stop in Utica. Like the extra daily train trips and like the 30' distance from the freight line.

Response Your comments about preserving and offering intercity rail passenger service for the City of Utica have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B would involve less right-of-way and environmental impacts than Alternatives 110 and 125. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Alternative 125 was designed to help cut the distance between Albany and Syracuse by 14 miles, but one of the

major drawbacks of this route is that it passes to the south of the stations on the current Empire Corridor in the Mohawk Valley between Syracuse and Albany. Therefore, 125 express service would not serve Rome, Utica, Amsterdam and Schenectady. Alternative 90B would increase service to Utica, as discussed in Chapter 3 of the Tier 1 EIS.

Commenter Tobin, Dave

Comment I-613-1 I fully support 110 Alternative. However, I am concerned that by the time that alternative is completed, it will be outdated.

Response Thank you for your comments on the High Speed Rail Empire Corridor Tier 1 EIS. In reviewing the types of technologies to be used in providing the service, the focus was on using systems that would allow for connecting with the existing rail network, and development that was within possible funding levels and time constraints for construction. During the selection of the alternatives for review in the Tier 1 EIS, alternatives with speeds of 160 mph and 220 mph were considered but not advanced. It was determined that the range of options advanced would be those with trains operating at 90, 110 and 125 miles per hour. It was determined that operating trains at higher speeds would have greater impact on the environment, require more financial investment to construct and require more public resources to operate. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Alternative 90B would involve less right-of-way and environmental impacts than Alternatives 110 and 125. Comments from the public, relating to the different service alternatives, have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.

Commenter Tonning, Nils A.

Comment I-614-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

- The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
- The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
- The Terminal is centrally located within a two-mile radius of city-center
- The Terminal also has secure parking facilities for up to 450 vehicles
- The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
- The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including

Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter **Torcello, Frank**

Comment
I-615-1 I just want to take a moment to encourage that this project bring the high speed rail line through Buffalo, NY. Ideally the track could come straight from NYC up to Buffalo and then out to Albany, etc.

Response Thank you for your comments supporting the High Speed Rail Empire Corridor Program and for the need for improving rail passenger service on the route, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B will improve service along Empire Corridor, providing more frequent, reliable service to Buffalo, Albany, and New York City.

Commenter **Trinder, Stephen**

Comment
I-616-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:
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-The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
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-The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-614-1.

Commenter **True-Frost, Cora**

Comment
I-617-1 My family wholeheartedly embraces the plans for a high speed rail connecting Syracuse and NYC.

Response Your comments in support of the High Speed Rail Empire Corridor Program have been considered by FRA and NYSDOT in the selection of the Preferred Alternative, which will improve service between NYC and destinations along Empire Corridor West, including Syracuse.

Commenter **Trufelman, Lloyd**

Comment
I-618-1 High speed rail would be a prudent 21st century infrastructure investment for NY State. However a conventional system would be very costly, so I would encourage state planners to investigate the option of testing the Hyperloop,

Response	Thank you for your comment on the High Speed Rail Empire Corridor Tier 1 DEIS. In reviewing the types of technologies to be used in providing the service, the focus was on using systems that would allow for connecting with the existing national and regional rail network on the Northeast Corridor. Comments from the public, relating to the different service alternatives, have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Tulloch, Timothy
Comment I-619-1	I support the 110 option for these reasons: 1. For not much more cost than that of 90B, the 110 proposal provides an additional 325 miles of dedicated passenger track, providing the maximum segregation--as I understand it--between passenger and freight trains using the corridor. In addition to increasing safety and expediting traffic (for both rail and passenger services), 110 delivers the maximum speed and travel times among the non-electric options. 2. Track and other infrastructure projects under this plan will begin to improve performance incrementally, long before the entire program is completed. Its benefits will be quickly apparent. 3. This plan's maximally improved infrastructure will be better able to handle higher-speed trains that will very likely be developed in the future.
Response	Thank you for your comments supporting the 110 Alternative, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternatives 90B and 110 would restore large sections of third and fourth track, but Alternative 90B would constrain more of the additional trackage to the existing right-of-way, substantially reducing costs and impacts. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight traffic and will reduce travel times between New York City and Niagara Falls by 1 ½ hours in 2035, compared to the Base Alternative.
Commenter	Tulloch, Timothy
Comment I-619-2	In the hearing and in the informational handouts, I notice the absence of any mention of the fact that this is an international corridor, connecting two megacities, New York and Toronto.
Response	Thank you for your comment. The scope of the Tier 1 EIS focuses on the Empire Corridor from New York City to Niagara Falls, New York, and passenger forecasts conservatively exclude trips that may have one trip end in Toronto. The program will improve service that operates along Empire Corridor, including Maple Leaf service that continues into Toronto.
Commenter	Tulloch, Timothy
Comment I-619-3	Further, has any thought been given to cooperation with Canada to improve total NYC-Toronto and Toronto-NYC travel times by upgrading the Canada leg?
Response	Thank you for your comments. The scope of the High Speed Rail Empire Corridor Program is focused on improvements between New York City and Niagara Falls. Additional improvements on routes in Canada out of this corridor are not being considered as part of the Empire Corridor Program at this time. The Preferred Alternative will improve service along the Empire Corridor, and improvements to Empire Service will benefit travel on connecting regional lines, including connecting trains to destinations such as Toronto (Maple Leaf Line).
Commenter	Michaelson, Kirsten

Comment I-620-1	When I initially heard about the High Speed Rail Project, it was in a Wall Street Journal article about six months ago. It said it was being orchestrated by the Pullman Company and they were intending to use Pullman-type cars, sleeping cars as part of the project and it was going to go over to Lake Placid. It was a Wall Street article about six or nine months ago and I wonder if any of that is happening still or in the plans?
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. The purpose of the High Speed Rail Empire Corridor Program is to introduce higher passenger train speeds on the Empire Corridor and to improve reliability, travel times, levels of train service and passenger amenities. Except for the Lake Shore Limited service, Pullman-type sleeping cars are not envisioned for the Empire Corridor service.
Commenter	Michaelson, Kirsten
Comment I-620-2	Did you cover that at the beginning of your talk or is that online, the timetable of how long it will take to build once the project is selected?
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. The schedule for implementation of the High Speed Rail Empire Corridor Program was addressed in the Service Development Plan and will be further developed in the Tier 2 assessment. The program will continue with the identification of funding for individual segments of the route and specific projects. As described in Section 6.3 of the Tier 1 EIS, the Preferred Alternative would begin to confer benefits to the users by 2 to 5 years after the start of construction..
Commenter	Michaelson, Kirsten
Comment I-620-3	My name is Kirsten Michaelson and my comment is, my vote is for the 125 train with it stopping in Utica.
Response	Your comments about preserving and offering intercity rail passenger service for the City of Utica have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was designed to help cut the distance between Albany and Syracuse by 14 miles, but one of the major drawbacks of this route is that it passes to the south of the stations on the current Empire Corridor in the Mohawk Valley between Syracuse and Albany. Therefore, 125 express service would not serve Rome, Utica, Amsterdam and Schenectady. Alternative 90B was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance, and would increase service to Utica, as discussed in Chapter 3 of the Tier 1 EIS.
Commenter	Tylicke, Scott
Comment I-621-1	As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons: -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for

certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter Umhauer, Kitty

Comment I-622-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:
 -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
 -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
 -The Terminal is centrally located within a two-mile radius of city-center
 -The Terminal also has secure parking facilities for up to 450 vehicles
 -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
 -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the prior response.

Commenter Valerio, John

Comment I-623-1 Why not use SYR as a hub and build a high speed rail SYR - BGM - AVP - NYC. Runs North to South. Less stops and train could reach full potential of speed. Current BUF - ALB could be upgraded and used to connect to SYR hub.

Response Thank you for your comments on the Empire Corridor High Speed Rail Program. The scope of the program is focused on improvements between New York City and Niagara Falls on or near the current Empire Corridor alignment. Comments from the public, for improvements to the service outside of these limits, have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative. In selecting Alternative 90B as the Preferred

	Alternative, the FRA and NYSDOT, selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts.
Commenter	Vallelonga, Damian
Comment I-624-1	I fully support faster train service throughout the state, and would likely travel more often via train if this were available.
Response	Thank you for your comments supporting the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Mink, Dan
Comment I-625-1	To have an average time of 77 miles per hour, I can do that in my car. What is the benefit to the rider as opposed to the massive benefits for unions, for suppliers, for construction companies, for producers of raw materials, all these people benefit greatly but the end user will get virtually no benefit from this.
Response	Thank you for your comments on the HSR Empire Corridor Program. Economic costs and benefits of each alternative for the High Speed Rail Empire Corridor Program have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. Alternative 90B, the Preferred Alternative, would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would double the frequency of service on Empire Corridor West. Alternative 90B would also involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. Chapters 5 and 6 of the Tier 1 EIS describe the costs and benefits of the program alternatives.
Commenter	Van Ness, Cynthia
Comment I-626-1	As a supporter of the National Landmark known as the Buffalo Central Terminal, I would like to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project ? Tier I EIS. Please bring rail back to this extraordinary building!
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-621-1.
Commenter	Van Patten, Chris
Comment I-627-1	Please make this happen! Option 125 sounds like the best possible option.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, relating to Alternative 125, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative). The Alternative 90A improvements are incorporated into the Preferred Alternative.
Commenter	Van Patten, Chris
Comment I-627-2	One idea: construct a new high speed station in Herkimer.
Response	Thank you for your comments regarding a new station in Herkimer. The Tier 1 EIS for the High Speed Rail Empire Corridor Program evaluates a range of corridor-level service

improvements for intercity passenger rail with the purpose of making decisions on system wide level service, including service reliability, frequency, and train speeds. The Tier 1 EIS considers using the existing stations in each of the alternatives. The inclusion of additional stations along the Empire Corridor could be part of future studies for expanding service.

Commenter Van Riper, Daniel W.

Comment I-628-1 This concerns the Livingston Avenue Bridge in Albany NY, which is disintegrating at the base and desperately needs to be replaced. The new bridge MUST have a dedicated pedestrian walkway AND a dedicated bike lane on BOTH sides.

Response Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge.

Commenter Van Valin, Robert

Comment I-629-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

- The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
- The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
- The Terminal is centrally located within a two-mile radius of city-center
- The Terminal also has secure parking facilities for up to 450 vehicles
- The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
- The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter Vaughan, Ph.D., Raymond C.

Comment I-630-1 I support Alternative 110, partly because of its superior Cost Effectiveness (low Annualized O&M Cost per Rider). However, I also support ongoing planning work for higher-speed alternatives such as 125.

Response Thank you for your comments supporting the 110 and 125 Alternatives and the benefits from high speed rail, which have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative. Alternative 90B was selected as the Preferred Alternative, as it would add 370 miles of tracks and would constrain more of the additional trackage to the existing right-of-way than Alternatives 110 and 125. Although Alternative 110 has the lowest subsidy, the subsidy for the Preferred Alternative (Alternative 90B) would be \$13 per rider, which would be lower than both Alternative 125's subsidy per rider of \$14 and the Base Alternative's subsidy per rider of \$17 per rider. Alternative 90B's costs would also be less than that for Alternatives 110 and 125.

Commenter Vaughan, Ph.D., Raymond C.

Comment I-630-2 The Tier 1 DEIS should be updated to reflect current status of the Niagara Falls station

Response Thank you for your comments. Information on the reconstructed Niagara Falls International Station has been incorporated into the Tier 1 EIS. This facility replaced the existing Amtrak facilities and provides a facility that recognizes the international tourist destination at Niagara Falls, New York and included improvements to the track and signal systems to improve train operations at the new station location. Section 2.5.5 discusses the current status of improvements at stations along Empire Corridor. Chapter 3 of the Tier 1 EIS does reflect the current status for the station and the project is included as part of the Base Alternative.

Commenter Vaughan, Ph.D., Raymond C.

Comment I-630-3 The Empire Corridor High Speed Rail program should not defer improvement/replacement of the downtown Buffalo station until Alternative 125. Buffalo needs a better station.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the stations in Buffalo, New York. Improvement to the passenger rail facilities in the City of Buffalo area is an important goal of the High Speed Rail Empire Corridor Program. NYSDOT has implemented upgrades at the existing rail station at Buffalo-Depew to improve/rehabilitate the parking lot and enhance passenger access to comply with Americans with Disabilities Act requirements. The High Speed Rail Empire Corridor Tier 1 EIS evaluates a range of improvements for the purpose of making decisions on corridor-level service. Alternative 125, which would have required a new or relocated Buffalo station location, has been dismissed from further consideration. The focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. In the spring of 2017, the committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-629-1.

Commenter Vaughan, Ph.D., Raymond C.

Comment I-630-4 Alternatives analysis for the Buffalo station is complex and needs to be undertaken as soon as possible. The alternatives should include at least two geographic locations near downtown Buffalo (reuse of restored Central Terminal, and a potential new location immediately north or west of the "Larkinville" area of Buffalo) that are capable of serving trains to/from Cleveland and Chicago as well as trains to/from Niagara Falls and Toronto. Analysis of such alternatives should be sufficiently detailed to show how freight and passenger rail traffic would be separated (e.g., by flyovers or by passenger tracks that remain elevated) at the Belt Line and elsewhere, and should provide at least a preliminary

assessment of light rail and automobile traffic flows (for passengers going to/from the station) in relation to existing light rail and traffic arteries.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-629-1.

Commenter Venturi, Jim

Comment Is 125MPH really high speed rail service?
I-631-1

Response Thank you for your comments on the High Speed Rail Empire Corridor Program. During the selection of the alternatives for review in the Tier 1 EIS, it was determined that the focus would be on a range of options with trains operating at 90, 110 and 125 miles per hour. It was determined that operating trains at higher speeds would have greater impact on the environment, require more financial investment to construct and require more public resources to operate. Comments from the public, relating to the different service alternatives, have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B was selected as the Preferred Alternative, as it would add 370 miles of tracks and would constrain more of the additional trackage to the existing right-of-way than Alternatives 110 and 125.

Commenter Venturi, Jim

Comment What are the most traveled flight routes?
I-631-2

Response Thank you for your comments about air travel in the Empire Corridor. Chapter 2 and Appendix E of the Tier 1 EIS provides details on the existing transportation systems in the Empire Corridor, including air travel. A detailed assessment of market demand and projected ridership was completed for each of the alternatives discussed in the Tier 1 EIS. Ridership and revenue performance have been important considerations by the FRA and NYSDOT in selecting Alternative 90B as the Preferred Alternative.

Commenter Venturi, Jim

Comment What about electrifying present service between Albany and New York City?
I-631-3

Response Thank you for your question regarding electric propulsion services in the Empire Corridor. The operating alternatives in the Tier 1 EIS for the High Speed Rail Empire Corridor continue to utilize diesel locomotives for the movement of trains between New York City and Albany-Rensselaer in the Hudson Valley. It was determined that diesel-electric locomotives could deliver the same operating performance as electric motive power.

Commenter Venturi, Jim

Comment What about improving times to Montreal?
I-631-4

Response Thank you for your comments. The High Speed Rail Empire Corridor Program is focused on improving intercity rail passenger service along the Empire Corridor between New York City and Niagara Falls. Amtrak service to Montreal is currently provided via the Adirondack Line. New York State has had a long partnership with Amtrak to provide service to Montreal dating back to 1974, and utilizes the tracks of the Canadian Pacific for this route. Over the years, New York State DOT has improved the tracks, including recently new

double track in the area of Ballston Spa, to upgrade passenger trains operations on this route. The Preferred Alternative will improve service along the Empire Corridor, and improvements to Empire Service will benefit travel on connecting regional lines, including connecting trains to Montreal (Adirondack Line). Improving service to destinations in Canada could be part of future studies for expanding service beyond the current area outlined in the Tier 1 EIS.

Commenter Verburg, Tom

Comment I-632-1 Please consider constructing a bicycling friendly lane on the Livingston Ave bridge for cyclists.

Response Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge.

Commenter Vester, Nathan

Comment I-633-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

- The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
- The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
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- The Terminal also has secure parking facilities for up to 450 vehicles
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- The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter Vincent, Jim

Comment I-634-1	The last thing NY needs is a "high speed rail Empire Corridor." As all high speed rail projects have shown they are not economically feasible and in many cases the overall rail system and equipment will not support them. Less spending and lower taxes will bring more business to NY not projects like this.
Response	Concerns from the public on the High Speed Rail Empire Corridor Program have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 EIS. Economic costs and benefits of each alternative for the High Speed Rail Empire Corridor Program have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. Alternative 90B, the Preferred Alternative, would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would double the frequency of service on Empire Corridor West. Alternative 90B would also involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. Chapters 5 and 6 of the Tier 1 EIS describe the costs and benefits of the program alternatives.
Commenter	Vitale, Joe
Comment I-635-1	As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons: -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-633-1.
Commenter	Volcko, Meghan, D.S. Ray Middle School, D.S. Ray Middle School
Comment I-636-1	I think that we should support the High Speed Rails. Although it is very costly, building these trains would benefit our economy and people greatly. I personally think that the government should fund the Alternative 110 option
Response	Thank you for your comments supporting the High Speed Rail Empire Corridor Program and Alternative 110, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Because of the required property acquisitions, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance

Commenter	Waack, Peter
Comment I-637-1	I am deeply concerned about the lack of progress with trains in the US. I understand that train cargo is very important so I don't see a way that the cargo moving and passenger moving can co-exist on the same train tracks. We should do all we can develop our own tracks for passenger travel.
Response	Your comments on the High Speed Rail Empire Corridor Program have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. The importance of preservation and the improvement of freight rail traffic to the economy of New York State has been a critical factor in the selection of a preferred alternative.
Commenter	Walsh, Charles
Comment I-638-1	There are many more benefits to installing a high-speed railroad system in New York State, which is why the railroad system should be updated to a high-speed rail or at least have the current tracks upgraded so that trains would be able to travel faster than they do now.
Response	Thank you for your comments supporting the High Speed Rail Empire Corridor Program and for the need for improving rail passenger service on the route, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail, the majority of which is located within the existing right-of-way.
Commenter	Walter, Christine
Comment I-639-1	With regards to the Livingston Avenue bridge, I support its restoration with full pedestrian and bicycle access.
Response	Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge .
Commenter	Walter, Robert C.
Comment I-640-1	the first priority of the state and Amtrak is to increase track and station capacity to reduce conflicts that cause delays.
Response	Thank you for your comments supporting the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Walter, Robert C.
Comment I-640-2	Add a third track between Buffalo and Albany dedicated to Amtrak that could offer increased speeds.

Response	Thank you for your suggestion regarding a third track between Albany and Buffalo. As described in the preceding response and Chapter 3 of the Tier 1 EIS, Alternative 90B would add additional trackage, including more than 280 miles of third track between Schenectady and Buffalo.
Commenter	Walters, John
Comment I-641-1	Thoughts and/or studies on faster service are just a waste of money
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Walters, John
Comment I-641-2	Considering the rate of diminishing returns, it makes little sense to look beyond the (90A) plan projected to be in the range of \$1.6 billion.
Response	Thank you for your comments in support of Alternative 90A. Economic costs and benefits, relating to the different alternatives, have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. The Alternative 90A improvements are incorporated into the Preferred Alternative.
Commenter	Walters, John
Comment I-641-3	In any event a track update regardless of the plan selected is a worthy effort.
Response	Thank you for your comments, relating to the infrastructure improvements for the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage, located primarily within the existing right-of-way, to better segregate passenger and freight rail.
Commenter	Walton, Richard
Comment I-642-1	A better use of money would be to push up repairs of long neglected roads and bridges before spending on a project that will never see it's projected use claims. The upstate area has little use for mass transit as we are not as densely populated as downstate. If it were not for big and continual subsidies mass transit systems in upstate cities could not survive.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 EIS.
Commenter	Walton, Richard
Comment I-642-2	If you want to improve rail system from Boston to Washington DC you have a population thru that corridor that should make enough use as to make it viable. After this past winter so many roads in this area need major rehabbing and state grants to cities and towns for road and bridge repairs would be a far better use of any money earmarked for the High Speed Rail Project.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Tier 1 DEIS, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. The Empire Corridor route traverses the largest population centers in the state, including New York City, Yonkers, Albany, Rochester, and Buffalo.
Commenter	Wang, Jason

Comment I-643-1	It would seem alternative 90B and 110 are the best alternatives.
Response	Thank you for your comments on these alternatives, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternatives 90B and 110 would restore large sections of third and fourth track, but Alternative 90B would constrain more of the additional trackage to the existing right-of-way, substantially reducing costs and impacts.
Commenter	Wang, Jason
Comment I-643-2	The 125 alternative seems utterly ridiculous, however much I would like to see HSR using catenary rather than diesel run throughout the state. Page Accessed From: https://www.dot.ny.gov/empire-corridor/contact
Response	Thank you for your comments supporting the High Speed Rail Empire Corridor Program and relating to Alternative 125, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 would create a dedicated, 2-track passenger right-of-way over much of the Empire Corridor and was dismissed due to higher costs and impacts.
Commenter	Warner, Tom
Comment I-644-1	Just do it! It has to be good to have a fast, easy and inexpensive rail system from Buffalo to Albany and New York City.
Response	Thank you for your comments supporting the High Speed Rail Empire Corridor Program and for the need for improving rail passenger service on the route. Comments from the public have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative. Alternative 90B would involve lesser costs and speeds increases than Alternatives 110 and 125 and would constrain more of the additional trackage to the existing right-of-way.
Commenter	Washer, Steve
Comment I-645-1	I WOULD LIKE FOR AMTRAK TO INCREASE SPEEDS OF 175 MPH OR 195 MPH
Response	Thank you for your comments concerning very high speed train technologies, which were considered in the Tier 1 EIS for the High Speed Rail Empire Corridor Program. During the selection of the alternatives for review in the Tier 1 EIS, it was determined that the focus would be on a range of options with trains operating at 90, 110 and 125 miles per hour. It was determined that operating trains at higher speeds would have greater impact on the environment, require more financial investment to construct and require more public resources to operate. Comments from the public, relating to the different service alternatives, have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.
Commenter	Wasiutynski, Christopher
Comment I-646-1	Assumptions about rolling stock, necessary to calculate trip-times, must be clearly stated. Is the assumption a F32 locomotive, 6 Amfleet cars? If not 8 or 9 cars would give different performance.
Response	Thank you for your comment. Equipment for rolling stock for the Preferred Alternative is addressed in Chapter 3 and Appendix E of the Tier 1 EIS. The acquisition of trainsets/locomotives and coaches to support service expansion is addressed in the Service Development Plan. Equipment selections and specifications will be further reviewed and evaluated as the program moves forward in the Tier 2 assessments.

Commenter	Wasiutynski, Christopher
Comment I-646-2	“New Rolling-Stock” in options 90A, 90B, 110: would it have similar or difference performance?
Response	Thank you for your comments regarding new train set performance for the alternatives considered. The operating performance is similar for the new rolling stock in the different alternatives, and, as addressed in the preceding response, equipment and equipment needs for the alternatives are outlined in the Tier 1 FEIS and the Service Development Plan.
Commenter	Wasiutynski, Christopher
Comment I-646-3	Locomotive change at Albany: this adds 10 to 20 minutes. Do trip times for 90A, 90B, 110 alternatives assume a locomotive change, or not?
Response	Operating plans for the alternatives include the provisions at Albany-Rensselaer for changing of crews and operating requirements (servicing of locomotives and passenger coaches). Albany-Rensselaer is the main crew headquarter and equipment servicing location on the Empire Corridor between New York City and Niagara Falls.
Commenter	Wasiutynski, Christopher
Comment I-646-4	125 mph diesel locomotives are being ordered from Siemens, with Cummins QSR95 diesel motors, by a consortium of 5 states with funding by FRA (32 locomotives) 4.a. These provide a different 125 Alternative, costing about \$1 billion less without electrification.
Response	Thank you for your comments on the diesel engine locomotives for Alternative 125 for the High Speed Empire Corridor Program, which have been considered by the FRA and in the selection of the Alternative 90B as the Preferred Alternative.
Commenter	Wasiutynski, Christopher
Comment I-646-5	These lighter weight, more powerful 4000 HP locomotives will give higher performance even in the 110 alternative. Travel Times with these locomotives should be re-calculated. Since these 125 MPH locomotives have AC drive, a dual-mode version should be easy to produce.
Response	Thank you for your comments on operation with dual-mode locomotives, which is a requirement in the operation of trains between New York City and Albany-Rensselaer in the Hudson Valley. Consideration for the next generation of dual-mode locomotives for this route will include the performance standards necessary for achieving the trip times and maximum operating speeds.
Commenter	Wasiutynski, Christopher
Comment I-646-6	At the Poughkeepsie hearing on the Tier 1 DEIS for the High Speed Rail Empire Corridor Program, you told me that you would be interested in getting more information on the 125 mph Diesel locomotives which are being ordered by a consortium of 5 Midwestern and Western states headed by Illinois DOT. I promised to send links to information. LINKS are given below. I think the availability of `125 mph diesel locomotives has implications for the Empire Corridor Program under 4 headings: (1) An alternative version of the 125 option, not requiring electrification; (2) Reduced travel times for the 110 option, due to higher performance; (3) Higher speeds up to 125 mph may be possible on some segments, in the 110 option, giving a third 'low-impact' 125 option; (4) Dual-Mode version of the locomotive should be easy to produce. I attach brief discussions of these 4 issues following the links.

Response	Thank you for your comments, which have been considered in the selection of Alternative 90B as the Preferred Alternative. In the Tier 2 assessments, the FRA and NYSDOT will be reviewing the types of locomotives and rolling stock necessary for High Speed Rail Empire Corridor Program.
Commenter	Wasiutynski, Christopher
Comment I-646-7	Availability of 125 mph diesel locomotives provides an alternative variant of the 125 option, without electrification. Under NEPA ('alternatives to the proposed action') this should be mentioned in the EIS, as a 125 sub-option. The biggest difference will probably be about \$1 billion lower cost, by omitting electric catenary, substations etc. The performance of the 125 mph diesel locomotives may also differ from performance of electric locomotives, yielding different trip times. (2) Re-calculate travel times for the 110 option: the 125 mph locomotives are more powerful, 4000 hp instead of 3200 hp for the Dual-Mode GE P32DM locomotives now used on the Empire Corridor, whose continued use is assumed in the DEIS. They will also be lighter.
Response	Thank you for your comment. The Tier 1 EIS discusses the types of energy used for trains in Chapter 3 and Section 4.20. For Alternative 125, a dual mode diesel-electric locomotive was considered.
Commenter	Wasiutynski, Christopher
Comment I-646-8	Possible higher speeds in an 'upgraded 110' option. it may be possible to increase speeds on some segments such as Rochester-Buffalo and Syracuse-Utica where there is less curvature, using the 125 mph locomotives and allowing speeds above 110 mph where possible. Travel times might be slightly faster. This might be labelled as a new 'Low-Impact 125 option.'
Response	Thank you for your suggestions regarding opportunities to achieve high speeds and faster service times for Alternative 110. However, Alternative 90B has been selected as the Preferred Alternative. Alternative 90B, the Preferred Alternative, would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. Moreover, Alternative 90B would have fewer environmental impacts than Alternative 110. The operating speeds outlined for each of the alternatives discussed in the Tier 1 EIS of the High Speed Rail Empire Corridor Program are determined by thresholds for speeds that correlate with different classes of tracks established by the FRA. Increases to operating speeds of the trains will need to reflect FRA requirements for both the infrastructure and train operations. In the future, additional improvements to the right of way may be required in areas to raise maximum authorized speeds.
Commenter	Wasiutynski, Christopher
Comment I-646-9	Dual-Mode Version of Locomotive. The 35 locomotives in the Illinois DOT order are not dual-mode. However, Siemens states that they have AC motors, which implies that a dual-mode version with third-rail electric pickup should be easy for Siemens to produce, since the power electronics used with AC motors includes virtually all that is needed to control power flow from the third rail. (That is the reason why the GE dual-mode locomotives now used between New York City and Albany have AC motors, unlike most of Amtrak's GE locomotives. The AC circuitry includes circuitry needed to control third-rail power).
Response	Thank you for your comments. Locomotive and rolling stock performance and specifications will be reviewed by the FRA and NYSDOT in advancing the Preferred Alternative outlined in the Tier 1 EIS for the High Speed Rail Empire Corridor Program. It

	should be noted that the locomotives utilized on the Empire Corridor need to be able to function on a 600 volt Direct Current (DC) third rail and locomotives equipped with Alternating Current (AC) traction motors need to carry inverter systems to convert the DC power to AC power, adding to the complexity in the locomotive design.
Commenter	Wasiutynski, Christopher
Comment I-646-10	Unstated Assumptions about Rolling Stock Need to be Clarified. That assumption should be explicitly stated..
Response	Thank you for your comments. The Tier 1 FEIS (Chapter 3 and Appendix E) and the Service Development Plan outlines the assumptions for locomotives and rolling stock.
Commenter	Wasiutynski, Christopher
Comment I-646-11	Unexplained Assumption: 'New Rolling-Stock' in Alternatives 90A, 90B, 110: Will this 'New Rolling-Stock' have different performance from :present rolling-stock, affecting trip times? If so, how will it differ? If not, please state that performance will be unchanged.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. The assumptions for locomotives and rolling stock performance are outlined in the Tier 1 FEIS and SDP (as addressed in the preceding response), and the trip times are defined for the Preferred Alternative.
Commenter	Wasiutynski, Christopher
Comment I-646-12	Unclear Assumption: the Costly and Time-Consuming Locomotive Change in Albany: Do travel times in Alternatives 90A, 90B, 110 assume that locomotives will continue to be changed in Albany? Or do they assume no locomotive change? What assumption is being made?
Response	Thank you for your comment. Operating plans for the alternatives include the provisions at Albany-Rensselaer for changing of crews and operating requirements (servicing of locomotives and passenger coaches). Albany-Rensselaer is the main crew headquarter and equipment servicing location on the Empire Corridor between New York City and Niagara Falls. These assumptions are outlined in the Tier 1 FEIS and SDP.
Commenter	Wasiutynski, Christopher
Comment I-646-13	125 mph Siemens Diesel Locomotives: On March 18, 2014, an order was placed by five States headed by Illinois DOT for thirty-two high-speed 125 mph 'Charger' diesel locomotives to be supplied by Siemens with Cummins QSK95 diesel motors, with an option for 225 additional locomotives. These locomotives with 4400 horsepower and a lighter weight of 120 tons will offer higher performance than the current General Electric P32DM locomotives. What trip times on the Empire Corridor would result from use of these locomotives? (I mentioned these 125 mph locomotives in an E-mail to Marie Corrado, Director, Major Projects Office, NYSDOT, who replied that my comments will be incorporated in this record).
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. The performance and specifications of locomotives and rolling stock, as outlined in the Tier 1 EIS and Service Development Plan, will be further developed for the Preferred Alternative in the Tier 2 assessments.
Commenter	Wasiutynski, Christopher
Comment I-646-14	Superelevation of New Third Track, 110 Alternative: Please State What Assumption is Made in the DEIS:

If higher superelevation for the third track is assumed in the DEIS, leading to faster trip times, the DEIS should so state. What maximum superelevation on the third track is assumed?

Response Thank you for your comments. Alternative 110 has been dismissed from further consideration, however, assumptions regarding the conceptual design for Alternative 110 are discussed in Chapter 3 and Appendix C of the Tier 1 EIS. Track super-elevations will have to comply with FRA requirements for different classes of tracks. The Tier 1 EIS compared the alternatives based on conceptual design, and Tier 2 assessments will advance designs for Alternative 90B, the Preferred Alternative.

Commenter Wasiutynski, Christopher

Comment I-646-15 Question: When the New York Central RR operated extensive passenger services from 1935 to 1955 on a 4-track railroad with separate tracks for Express and Local trains, what was the maximum superelevation on Express tracks?

Response Thank you for your question regarding track super-elevations on the New York Central Railroad. The New York Central used a formula for determining the super-elevation in curves based on the degree of curvature, length of the curve, desired operating speed and adjoining track alignment. The company followed a practice of allowing a maximum of 6 inches of super elevation per their engineering standards.

Commenter Wasiutynski, Christopher

Comment I-646-16 Lack of Coordination with Local Transit: A Very Important Issue which Deserves to be Mentioned.

Response Thank you for your comments on transit connections. Transit connection opportunities are addressed in the Service Development Plan, and have been considered in design of new stations built as separate projects, including those constructed at Albany-Rensselaer, Syracuse, Rochester, Buffalo-Exchange Street Station, and Niagara Falls.

Commenter Wasiutynski, Christopher

Comment I-646-17 I am not suggesting that the DEIS provide detailed plans for Amtrak - bus transit coordination. But I believe the DEIS needs to state clearly and emphatically that this is an important issue. To assume that intercity rail can attract good ridership while remaining un-integrated with local transit is totally unrealistic.

Response Thank you for your comment. The purpose of the High Speed Rail Empire Corridor Program is to introduce higher passenger train speeds on the Empire Corridor and to improve reliability, travel times, levels of train service and passenger amenities. Transit connections are identified in the Service Development Plan, which also identifies station improvements and amenities and opportunities to build on current intermodal connections along the route.

Commenter Wasiutynski, Christopher

Comment I-646-18 Is the 'Upstate' rail travel market restricted to persons travelling to and from New York City? If not, then the schedule just described, where all trains must either originate or terminate at Penn Station in Manhattan, will be inadequate for travellers within the Albany - Buffalo corridor.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program. The market and ridership analysis for the program is documented in Appendix B, and includes all of the Amtrak stations and major markets along Empire Corridor between New York City and Niagara Falls. Improvements to schedules and the frequency of train trips along the route were evaluated in the Service Development Plan and the Tier 1 EIS.

Commenter	Wasiutynski, Christopher
Comment I-646-19	If reductions in trip times greater than those achieved in the 110 Alternative are a priority, then consideration should be given to tilt-body trains.
Response	Thank you for your comment supporting the 110 Alternative. Alternative 90B would provide substantial travel time savings, but would constrain more of the additional trackage within the existing right-of-way than Alternative 110. Based on this, and resulting lower costs and impacts, Alternative 90B has been selected as the Preferred Alternative. Consideration of the types of locomotives and rolling stock will be further evaluated in the Tier 2 assessments. The use of tilt trains on the route may present a challenge where the clearances of the tilt train wheel and axle assemblies may not meet the recommended allowances to operate on lines equipped with third rail. The Empire Corridor trains must use Metro North Railroad and Pennsylvania Station, New York, where both sections of the route utilize third rail for providing electric current for train operations.
Commenter	Waszkiewicz, Ed (Butch)
Comment I-647-1	DO NOT PASS BY UTICA and ROME with High Speed Rail. YES for 110. NO for `125
Response	Your comments about preserving and offering intercity rail passenger service for the cities of Utica and Rome have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was designed to help cut the distance between Albany and Syracuse by 14 miles, but one of the major drawbacks of this route is that it passes to the south of the stations on the current Empire Corridor in the Mohawk Valley between Syracuse and Albany. Therefore, 125 express service would not serve Rome, Utica, Amsterdam and Schenectady. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Because of the required property acquisitions, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance. Alternative 90B was selected over Alternatives 110 and 125, based on its substantially lower costs, impacts, and its performance. As discussed in Chapter 3 of the Tier 1 EIS, Alternative 90B would increase service to Utica.
Commenter	Weekes, Michael
Comment I-648-1	I recommend option 90A and look forward in the not too distant future to a national solution utilizing the 220 MPH capability
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, relating to Alternative 90A, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90A improvements are included in the Preferred Alternative.
Commenter	Weekes, Michael
Comment I-648-2	Five factors will drive the effectiveness of the effort: leadership, process, people, technology, and performance measures. I would be glad to help support the development and deployment of any key activities related to the initiative.
Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in selecting the Preferred Alternative.
Commenter	Weekes, Michael

Comment I-648-3	My review of the alternatives seems to reveal that 90A would be the best alternative unless certain factors like cost or ridership are weighted other than they appear to be.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, in support of Alternative 90A, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. The Alternative 90A improvements are incorporated into the Preferred Alternative.
Commenter	Welch, Alan
Comment I-649-1	I believe Alternative 125 is the best course of action for the Empire Corridor.
Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program and Alternative 125, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. This alternative will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).
Commenter	Welch, Alan
Comment I-649-2	If we lay the foundation now, alternatives 160 and 220 could become more feasible in the distant future. I think it is more important to build the Empire Corridor West first, as there needs to be station improvements and the 247-mile stop of track to be built.
Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have considered by the FRA and NYSDOT in selecting Alternative 90B as the Preferred Alternative. In reviewing the types of technologies to be used in providing the service, the focus was on using systems that would allow for connecting with the existing rail network, and development that was within possible funding levels and time constraints for construction. During the selection of the alternatives for review in the Tier 1 EIS, alternatives with speeds of 160 mph and 220 mph were considered but not advanced. It was determined that the focus would be on a range of options with trains operating at 90, 110 and 125 miles per hour. It was determined that operating trains at higher speeds would have greater impact on the environment, require more financial investment to construct and require more public resources to operate. Alternative 90B would involve less right-of-way and environmental impacts than Alternatives 110 and 125.
Commenter	Welker, Richard
Comment I-650-1	I believe utilization of the Buffalo Central Terminal would be beneficial to HS Rail in the US
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee,

tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter Wells, Maurice

Comment I-651-1 I would like to add my support for the New York State High Speed Rail Empire Program.

Response Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter Westcott, Lynn

Comment I-652-1 Please consider the Buffalo Central Terminal as part of a future New York State high speed rail system.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-650-1.

Commenter Westermann, Kevin

Comment I-653-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

- The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
- The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
- The Terminal is centrally located within a two-mile radius of city-center
- The Terminal also has secure parking facilities for up to 450 vehicles
- The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
- The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-650-1.

Commenter Whipple, John

Comment I-654-1 Wonderfull to get an updated train line in the state.

Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Whipple, John
Comment I-654-2	However we need the train station to be in the Capital in ALBANY (downtown) with another train station up town. The Rensselaer train station with a cab into the city is an option that does not work well. Please move the Albany-Ren station into the city of Albany.
Response	Thank you for your comment regarding a new station in Albany. The Tier 1 EIS for the High Speed Rail Empire Corridor Program is evaluating a range of corridor-level service improvements for intercity passenger rail with the purpose of making decisions on system wide levels of service, including service reliability, frequency, and train speeds. The Tier 1 EIS considers using the existing stations along Empire Corridor. The inclusion of additional stations along the Empire Corridor could be part of future studies for expanding service.
Commenter	White, Toney
Comment I-655-1	Please consider high speed rail through the Buffalo Central Terminal. Strategic placed and historically revitalizing to the entire region and Historic Polonia neighborhood.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-650-1.
Commenter	Moskowitz, Ed (Butch)
Comment I-656-1	I can imagine myself as a customer of the Adirondack Scenic Railroad coming in from New York City or Buffalo and coming by High Speed Rail and getting off at this station rather than at another station or have to get there than here, so I'm in favor of 110 from that standpoint. A couple of people said this evening we paid for the High Speed Rail, we want it here. And third, I am an individual of the Chamber of Commerce and as such, I will be very disappointed if the High Speed Rail does not stop here.
Response	Your comments about preserving and offering intercity rail passenger service for the City of Utica have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was designed to help cut the distance between Albany and Syracuse by 14 miles, but one of the major drawbacks of this route is that it passes to the south of the stations on the current Empire Corridor in the Mohawk Valley between Syracuse and Albany. Therefore, 125 express service would not serve Rome, Utica, Amsterdam and Schenectady. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Because of the required property acquisitions, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance. Alternative 90B was selected over Alternatives 110 and 125, based on its substantially lower costs, impacts, and its performance, and would increase service to Utica, as discussed in Chapter 3 of the Tier 1 EIS.
Commenter	Moskowitz, Ed (Butch)
Comment I-656-2	Another is groups of college students. If you come here in the weekends when there are college kids -- I've seen Hamilton College, I've seen Utica College vans outside these doors

and many others. They should not have to go to an alternate station to get to the High Speed Rail, and just customers generally.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program. The Tier 1 EIS focuses on improvements and alternatives on or near the current alignment of the rail passenger service between Albany and Niagara Falls, New York. Additional alternatives that were considered and eliminated from further study can be found in Chapter 3 of the Tier 1 EIS. In selecting Alternative 90B as the Preferred Alternative, the FRA and NYSDOT, selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts.

Commenter Moskowitz, Ed (Butch)

Comment I-656-3 I'm here in favor of 110 and I'm totally against 125. I don't speak just for Utica and Rome, there's a couple others, Schenectady and Amsterdam. It's good for all of us, and what about the Naval Science. Could you imagine the Naval scientists being in New York City and he or she wants to get on the train to get to Utica and hop on the fast train, the High Speed Rail, and it goes right by Utica, that just doesn't cut it.

Response Thank you for your comments, relating to Alternatives 110 and 125, have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative, for the reasons outlined in the above response. As noted in the Tier 1 FEIS, Alternative 90B would double the service frequency along Empire Corridor West for the service leg that includes Utica and Rome. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 of all of the alternatives considered and would increase ridership by 1 million over the Base Alternative.

Commenter Wiesner, Devin

Comment I-657-1 If this is viewed as a project that will be in existence for 50 to 100 years then I support the larger, more expensive upgrades
It seems to me that the corridor between Schenectady and New York should also receive significant improvements as the number of riders is so high.

Response Thank you for your comment in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight traffic and will reduce travel times between New York City and Niagara Falls by 1 ½ hours in 2035, compared to the Base Alternative. Alternatives 90B and 110 would restore large sections of third and fourth track, but Alternative 90B would constrain more of the additional trackage to the existing right-of-way, substantially reducing costs and impacts.

Commenter Williams, Collin

Comment I-658-1 I believe that New York should not implement the plan for high speed rails until we see the result of them in California, since California seems be far ahead of the project in New York. If the project is not successful there, I believe it is a good indicator of how the people of New York will react to essentially the same project.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 EIS.

Commenter Williams, Maureen R.

Comment I-659-1 However – I strongly feel that a train from Utica to Lake Placid would do well – all of us athletic people – hike-bike-boat-ski-roller blade would use it. It appears Utica is not even on the map

Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. Improvements in Empire Service would also improve service on regional lines that use the same trackage, such as Amtrak's Adirondack Line. However, the Adirondack Scenic Railroad, a separate right of way, would not follow the areas outlined in the program and does not service the same cities as the Empire Corridor.
Commenter	Wilson, Bonnie
Comment I-660-1	I know that the cost is huge and my concern is that I don't feel this would benefit the majority of New Yorkers. The proposed rail-line would not greatly speed-up transportation and to spend money on this at a time when our highways and bridges are in such desperate need of repair and replacement seems very wasteful to say the least. Financial concerns have had a lot of project on hold for some time.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT as part of the review process for the Tier 1 EIS.
Commenter	Wilson, Bonnie
Comment I-660-2	Let's concentrate on updating what we have and forget about a rail system that is not necessary at this time and does not help the majority of people.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. Environmental and economic concerns, operating benefits, capital requirements, and responsiveness to passenger needs have been considered by the FRA and NYSDOT in selecting the Preferred Alternative.
Commenter	Winship, Micah
Comment I-661-1	As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons: -The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy. -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York -The Terminal is centrally located within a two-mile radius of city-center -The Terminal also has secure parking facilities for up to 450 vehicles -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degree programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee,

tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter Wisinski, Patrick J.

Comment I-662-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

- The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
- The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
- The Terminal is centrally located within a two-mile radius of city-center
- The Terminal also has secure parking facilities for up to 450 vehicles
- The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
- The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the prior response.

Commenter Wnorowski, Mark

Comment I-663-1 The scope of the Empire Corridor Tier 1 Draft EIS is too narrow and too conservative.

Response Thank you for your comments. The scope of the High Speed Rail Empire Corridor Tier 1 EIS is consistent with the program purpose and need and requirements of the tiered NEPA/SEQR process. The transportation and environmental evaluations focused on discussing the different alternatives outlined in the Tier 1 EIS.

Commenter Wnorowski, Mark

Comment I-663-2 There is an assumption that current congestion in Pennsylvania Station in New York City will not be relieved. The Long Island Rail Road will complete it East Side Access project. That will free up capacity in Penn. Station. Amtrak will add capacity with it's Gateway Project.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program. Operations at Penn Station in New York will be organized around a number of factors as the Long Island Rail Road begins operations of their East Side Access service. It is anticipated that Amtrak operations, on the Northeast Corridor, will grow with the Gateway Project and repairs to the current North River Tunnels. The continued use of the station by New Jersey Transit and Metropolitan Transportation Authority will introduce Metro North Railroad service into Penn Station to allow their riders to access new employment opportunities on the West Side of Manhattan.

Commenter	Wnorowski, Mark
Comment I-663-3	People in Amsterdam and Rome could drive or be driven or take a bus or taxi to a nearby high speed rail station as people in places not Rome or Amsterdam will.
Response	Thank you for your comments, relating to the support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B would increase the frequency of service to stations on the west such as Rome and Amsterdam.
Commenter	Wnorowski, Mark
Comment I-663-4	If we build a system capable of 125 miles per hour they will run on it at 125. Amtrak is planning on having trains capable of 220 miles per hour someday. If we build a 125 mile per hour system we will not be able to take advantage of those speeds. Building a 125 mile per hour system, between Albany and Buffalo, is not going to be significantly cheaper than building one capable of 220 miles per hour some day.
Response	Thank you for your comment concerning train technologies considered in the High Speed Rail Empire Corridor Program. During the selection of the alternatives for review in the Tier 1 EIS, alternatives with speeds of 160 mph and 220 mph were considered but not advanced. It was determined that the focus would be on a range of options with trains operating at 90, 110 and 125 miles per hour. It was determined that operating trains at higher speeds would have greater impact on the environment, require more financial investment to construct and require more public resources to operate. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative). Alternative 90B would involve less right-of-way and environmental impacts than Alternatives 110 and 125. Comments from the public, relating to the different service alternatives, have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.
Commenter	Wokan, Sara
Comment I-664-1	Why is no hearing scheduled in the Southern Tier? Is the railroad going to bypass us along with everything else that has? Does Albany realize that NY has a Southern Tier??
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. Improvements to the service to be operated as part of the High Speed Rail Empire Corridor Program are focused between Niagara Falls and New York City. Additional routes out of this corridor are not being considered at this time as part of the program.
Commenter	Wolf, Phillips
Comment I-665-1	In favor of the “110” option
Response	Your comment in support of 110 Alternative has been considered by FRA and NYSDOT in selecting Alternative 90B as the Preferred Alternative. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Because of the required property acquisition, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance.
Commenter	Wolfe, Greg
Comment I-666-1	Bring high speed rail to buffalo!!

Response	Thank you for your comments in support of bringing high speed rail service to Buffalo, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight traffic and will reduce travel times between New York City and Niagara Falls by 1½ hours in 2035, compared to the Base Alternative. The frequency of service to Buffalo stations will also increase.
Commenter	Wolfe, Wm. F.
Comment I-667-1	I support any upgrade and expansion to AMTRAK that is feasible and makes economic sense.
Response	Your comments supporting the High Speed Rail Empire Corridor Program have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Wolfe, Wm. F.
Comment I-667-2	I am contacting you about a smaller issue, and that would be the upgrading of the remaining 90 miles of the former New York Central Adirondack Division between Big Moose and Lake Placid. The Adirondack Scenic Railroad operates the Utica to Big Moose section and the Saranac Lake to Lake Placid section. In the past 21 years, they have safely moved over a million passengers. High-speed rail is not needed here!
Response	Thank you for commenting on upgrading the Adirondack Scenic Railroad north of Utica. Currently, the High Speed Rail Empire Corridor Program is focused on improvements between New York City and Niagara Falls. Extending improvements beyond the area outlined by the alternatives in the Tier 1 EIS is not being considered at this time as part of the program, but could be part of future studies for expanding service as part of a separate project.
Commenter	Wolfe, Wm. F.
Comment I-667-3	Finally, one thing other than the track upgrade is needed, and that is a clear plan and procedure for interchanging private cars or chartered equipment from AMTRAK at Utica onto the Adirondack Scenic. CSX, AMTRAK, MA&N and ASR have issues involving union agreements, trackage rights, liability insurance and CSX is hostile to any type of passenger operation. Breaking that log jam is as necessary as upgrading the track.
Response	Thank you for your comments. The purpose of the High Speed Rail Empire Corridor Program is to introduce higher passenger train speeds on the Empire Corridor between New York City and Niagara Falls. Utica's train station has been extensively restored in partnership with Oneida County, and recently had an additional platform constructed on the westbound side that also provides connections with the Adirondack Scenic Railroad.
Commenter	Wolff, Adam
Comment I-668-1	I strongly recommend integrating the historic Buffalo Central Terminal in the EIS
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the need for station improvements in Buffalo, New York. Improvement to the passenger rail facilities in the City of Buffalo, including a new station development at Buffalo-Exchange Street and updates at the Buffalo-Depew Station, are discussed in the response to Comment I-661-1.
Commenter	Woolley, Jonathan

Comment I-669-1	I also believe the study should investigate ensuring good connections between the rail lines (both the potential 125mph HSR line and the improved current rail line) and local transit
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered in selecting Alternative 90B as the Preferred Alternative. The Tier 1 EIS evaluates a range of corridor-level service improvements for the purpose of making decisions on corridor-level service, including service reliability, service frequency, and train speeds. Station locations identified in the Tier 1 EIS, in most cases, provide access to the public for public transit. The Service Development Plan identifies transit opportunities at station sites, many of which have been reconstructed as part of separate projects. For station projects, opportunities for multimodal connectivity have been, or can be, pursued with the local municipality and transit provider.
Commenter	Woolley, Jonathan
Comment I-669-2	There really is no reason the speed limit between Spuyten Duyvil and Albany-Ren. should be less than 110 mph as it is a pretty straight, flat line of track, this study should look at increasing that stretch to at least 110 mph, or, better yet, faster.
Response	Thank you for your comments regarding train operating speeds between New York City and Albany. Increasing operating speeds on the Empire Corridor, between New York City and Albany-Rensselaer, presents many challenges. In the lower section of the route on Metro North Railroad, curves following the shore line of the Hudson River limit opportunities for increasing speeds. The sections of tangent track on the route are not continuous, and the possibilities for straightening the tracks are constrained by the river shore on one side and limited available properties. Further to the north, Amtrak and NYSDOT have been cooperating for a number of years to reduce running times and increase track speeds. Currently, the route is engineered for 110 miles per hour between Stuyvesant and Albany-Rensselaer.
Commenter	Woolley, Jonathan
Comment I-669-3	It should also be possible to build additional tracks north of Poughkeepsie to allow freight and passenger trains to pass each other as this should be a four track right-of-way, perhaps using a sensor fence system, to allow passing at faster than 110 mph. Additionally, the study should consider an additional track connecting into the Penn Station terminal fan in New York City; such a track would prevent a loss of service in the event of a breakdown in the existing tunnel.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. Appendix B of the Tier 1 EIS developed track alignments for each of the alternatives. Future projects have been identified for the Hudson Valley route that includes additional tracks on the Metro North Railroad portion of the route. Improvements to the Penn Station area will need to be coordinated with other projects in that location. This area is constricted by the close proximity to the Empire Connection tunnel and the North River Tunnels and is constricted by the ability to pass beneath the Long Island Rail Road's entrance to their West Side Yard facility.
Commenter	Woolley, Jonathan
Comment I-669-4	both south and west of Albany, building more grade-separated junctions may have to be considered to achieve this reliability, and the long term savings in terms of speed maintenance, as well as both accident prevention a reduction in insurance liability, may be worth the cost.
Response	Thank you for your comments regarding potential improvements needed on the Empire Corridor to achieve improved reliability, speed and safety. In developing the alternatives discussed in the Tier 1 EIS of the High Speed Rail Empire Corridor Program (Appendix B),

track alignments and supporting projects have been identified to support each of the options. The option of constructing grade separated junctions in the section between New York City and Albany-Rensselaer may be limited by the close proximity of the route to the Hudson River. However, in the 90B and 110 Alternatives, several grade separated junctions, or crossovers, are included in track arrangements to expedite the movements near Syracuse and Rochester. The connection of the passenger line from Albany-Rensselaer, with the freight line from Selkirk, west of Schenectady, is already designed to allow the routes to meet without conflicting movements.

Commenter Woolley, Jonathan

Comment I-669-5 I support the goal of this study to enhance both passenger and freight rail in the Empire Corridor.

Response Thank you for your comments, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. The importance of preserving and improving freight rail traffic to the economy of New York State have been an important factor in the selection of the Preferred Alternative.

Commenter Woolley, Jonathan

Comment I-669-6 I support the choice of alternatives of 110 or 125 miles per hour service. I would prefer to see service of 125 miles per hour, as I think the improvements that would result would most benefit the public, but am aware the delay in implementation until at least the mid-2030's (and likely later) might not make this the best choice. However, if improvements to only 110 mph are chosen, then I believe that improvements to 125 mph should be made as soon as subsequently possible.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program. Of the three higher speed Build Alternatives (90B, 110 mph and 125 mph) evaluated in the Tier 1 EIS, Alternative 90B would involve the lowest cost (less than half the cost of the most expensive alternative for 125 mph service), while providing the best overall on-time performance and the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. Alternative 90B would also constrain the majority of work within the right-of-way, involving fewer environmental impacts than Alternatives 110 and 125.

Commenter Wozniak, Mark

Comment I-670-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

- The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
- The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
- The Terminal is centrally located within a two-mile radius of city-center
- The Terminal also has secure parking facilities for up to 450 vehicles
- The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
- The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for

certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter Wright, Nancy

Comment I-671-1 As a supporter of the National Landmark known as the Buffalo Central Terminal, I would like to take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project ? Tier I EIS for the following reasons:

- The terminal is easily accessible from Toronto and other points North.
- It is the half way point between Chicago and NYC.
- It is a project already in progress with rail lines running to the area.
- The terminal is an integral part of Buffalo's historic architecture and therefore would be a beautiful destination for those traveling on the high speed rail.
- The building complex is huge so as much area as needed could be found to accommodate the needs of a high speed rail operation including parking, bus and taxi pick-up areas, passenger embarking and disembarking needs, baggage collection and distribution, restrooms, and restaurant facilities.
- Because the building complex is huge the rapid transit rail would not be the only tenant. Other tenants would be helping to support the complex.
- Buffalo and the surrounding area has a large, diverse workforce to fill positions as needed.
- Buffalo has many attractions including a thriving theater district, many diverse restaurants (both local and national) and a developing water front to draw people to the area.
- ? economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
- ? The Terminal is centrally located within a two-mile radius of city-center

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the prior response.

Commenter Yanik, John S.

Comment I-672-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

- The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
- The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities,

an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
 -The Terminal is centrally located within a two-mile radius of city-center
 -The Terminal also has secure parking facilities for up to 450 vehicles
 -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
 -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for certification and degree programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-670-1.

Commenter Young, Dennis

Comment I-673-1 I am writing to request that you approve the full-blown version of implementing cross-state, intercity high-speed rail in New York state.

Response Your comments in support of the High Speed Rail Empire Corridor Program have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight traffic and will reduce travel times between New York City and Niagara Falls by 1 ½ hours in 2035, compared to the Base Alternative.

Commenter Young, Dennis

Comment I-673-2 Please implement the High-Speed Rail 125 option.

Response Thank you for your comments, relating to Alternative 125, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B, a program of improvements largely situated within the existing rights-of-way, was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve far fewer environmental impacts than the other Build Alternatives considered.

Commenter Young, Jennifer

Comment I-674-1 As a supporter of the National Historic Landmark, Buffalo Central Terminal, I would like take a moment to voice my support regarding the Terminal's use for future High Speed Rail aka Empire Corridor Project Tier I EIS for the following reasons:

-The Terminal is an integral Tourism site in New York State due to its architectural design and transportation legacy.
 -The Terminal is currently working with various future tenants and funders for a major adaptive reuse project of the complex which will, in turn, create educational opportunities, an active Arts center, workforce and economic development and neighborhood reinvestment in the Broadway Fillmore District of Buffalo, New York
 -The Terminal is centrally located within a two-mile radius of city-center
 -The Terminal also has secure parking facilities for up to 450 vehicles
 -The Terminal already has a Main Concourse for travelers to dine and shop adding to the tourism and economic values for entrepreneurship and small business development
 -The Terminal will also house education classrooms and shared space accommodations for local, regional, state and national colleges and universities to locate essential classes for

certification and degreed programs in adaptive reuse studies thereby creating a benchmark for historic rehabilitation and restoration

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-670-1.

Commenter Young, Michael

Comment I-675-1 Given the alternatives proposed and the impacts considered in the DEIS, I suggest choosing Alternative 110 for the Empire Corridor High Speed Rail project.

Response Thank you for your comment and support of 110 Alternative, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered (see Exhibit 6-8 in the Tier 1 FEIS). Moreover, Alternative 90B would incur lower costs and fewer environmental impacts than Alternatives 110.

Commenter Zaffuts, Michael

Comment I-676-1 I am writing to voice my support for the expansion of a high speed rail system through the state.

Response Your comments supporting the High Speed Rail Empire Corridor Program have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter Zalucki, Richard

Comment I-677-1 Just a comment that I use Amtrak between Albany & NYC approx. 6 times per year and would LOVE to see travel time reduced.

Response Your comments in support of the High Speed Rail Empire Corridor Program have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B would shorten the trip from New York City to Niagara Falls by 1½ hours.

Commenter Zamow, Allie

Comment I-678-1 I vote for alternative 125, let's get NYS up to speed!

Response Thank you for your comments in support of Alternative 125 and the High Speed Rail Empire Corridor Program, which have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative. In selecting Alternative 90B as the Preferred Alternative, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).

Commenter Zarabozo, Peter

Comment I-679-1 I think the plan for high speed rail in the empire corridor is an excellent idea. I strongly support this initiative.

Response	Thank you for your comments supporting the High Speed Rail Empire Corridor Program. Comments from the public have been considered by the FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Roate, Connell
Comment I-680-1	Although, I'd love to see the 125, I think the dedicated extra railway is going to leave out quite a few of the cities, mainly Utica, Rome, Schenectady and Amsterdam, and the build-out time would be a lot longer on the 125.
Response	Your comments about preserving and offering intercity rail passenger service for the City of Utica have been considered by the FRA and NYSDOT in the selection of Alternative 90B as Preferred Alternative. Because it is situated largely within the existing right-of-way, it can be constructed in substantially less time than Alternative 125 and will begin to confer benefits within 2 to 5 years after start of construction. Alternative 125 was designed to help cut the distance between Albany and Syracuse by 14 miles, but one of the major drawbacks of this route is that it passes to the south of the stations on the current Empire Corridor in the Mohawk Valley between Syracuse and Albany. Therefore, 125 express service would not serve Rome, Utica, Amsterdam and Schenectady. The Preferred Alternative, Alternative 90B, was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance. As discussed in Chapter 3 of the Tier 1 EIS, the Preferred Alternative would increase service to Utica Rome, Schenectady and Amsterdam.
Commenter	Robinson, Martin
Comment I-681-1	Four out of five of the speeds proposed here at this presentation don't meet the Federal requirements to be labeled as high speed, let alone the possible public perception of high speed rail... In the 1940s, many of the speeds that are listed here that would be slightly higher in average, used to be the regular speeds for trains in the 1940s. I mean, trains used to average between 60 and 70 miles per hour with express routes often hitting the 80 to 90 per hour on a regular basis.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. Section 3.1, of the Tier 1 EIS, describes FRA's definitions of high-speed rail. The FRA, which was tasked by Congress to implement the High-Speed Intercity Passenger Rail (HSIPR) Program, has defined three (3) categories of high-speed rail: Core Express (speeds 125-250+ mph); Regional (speeds between 90-125 mph); and Emerging (speeds up to between 90 mph). The Preferred Alternatives (Alternative 90B) for the Empire Corridor program is classified as Emerging and Regional and therefore qualifies to be called a "high-speed rail" project.
Commenter	Switzer, James
Comment I-682-1	I'm curious as to how much of the funding of this is going to be taxes or whatever.
Response	Thank you for your comments on funding. Future funding for the program has not been determined at this time.
Commenter	Switzer, James
Comment I-682-2	I'm a construction worker and I'd like to see that the work is done locally with local workers in the -- in municipalities that the train goes through.
Response	Thank you for your comments. Individual projects or groups of projects will be advanced according to the Service Development Plan to Tier 2 environmental evaluations and design development. Selection of contractors and workers has not been determined at this time.
Commenter	Tucker, Donald

Comment I-683-1	I am very much for improving rail service in New York both to Albany and to New York City. I think it makes environmental sense.
Response	Your comments in support of the High Speed Rail Empire Corridor Program have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Tucker, Donald
Comment I-683-2	I would like the 110 proposal.
Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program and Alternative 110, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Because of the required property acquisition, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance.
Commenter	Wieczorek, Rich
Comment I-684-1	I'm in favor of the high speed rail.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Wieczorek, Rich
Comment I-684-2	My concern; I have two private crossings, the 110-mile one, corridor building, I think that's a little too much. I have concern with building new line, is it going to be like the thruway and what's it going to do the land where it's already -- where it's going to be proposed to go through? I don't believe we can afford to lose anymore farmland in this state or in this country, having suffered what the New York State thruway did to my family's farm. Just come and take it and, well, we'll cut you off from the other 40 acres and tough. Anyways, that aside, I'm concerned with having private crossings, what the impact there is going to be as far as safety. The other thing I noticed, one of the gentleman here from the DOT was showing me on one of the books over here, a proposed access road that would run parallel to the CSX corridor. Again, you going to drive back through my front yard now or what? That -- that's kind of where my concerns are, the safety issues on this and how they are going to be addressed.
Response	Thank you for commenting on the High Speed Rail Empire Corridor Program. In selecting Alternative 90B as the Preferred Alternative for the High Speed Rail Empire Corridor Program, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and environmental impacts. Chapters 2 and 3 of the Tier 1 EIS address safety for the existing corridor and the program alternatives. The designs for each improvement or project for the Preferred Alternative would be further refined and advanced in the Tier 2 assessments, including further reviews for public access and grade crossings and analysis to determine procedures for maintenance of the tracks and access to the rail infrastructure.
Commenter	Alberin, Ken
Comment I-685-1	Somehow Utica seems to be conspicuously left out from the process as we are not going to be a stop on this network. With the drone base coming along, I think you ought to consider including the Utica Train Station in the high speed options that are coming down the pike.

Response	Your comments about preserving and offering intercity rail passenger service for the City of Utica have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was designed to help cut the distance between Albany and Syracuse by 14 miles, but one of the major drawbacks of this route is that it passes to the south of the stations on the current Empire Corridor in the Mohawk Valley between Syracuse and Albany. Therefore, 125 express service would not serve Rome, Utica, Amsterdam and Schenectady. Alternative 90B was selected over Alternatives 110 and 125, based on its substantially lower costs, impacts, and its performance, and would increase service to Utica, as discussed in Chapter 3 of the Tier 1 EIS.
Commenter	Russell, Gary
Comment I-686-1	I guess some of my questions are projected annual ridership. Is it -- What's it really based on? Is it somewhat of a guess?
Response	Thank you for your comments on ridership patterns on the High Speed Rail Empire Corridor. A detailed assessment of market demand and projected ridership was completed for each of the alternatives discussed in the Tier 1 EIS. Chapter 2 documents historic/existing ridership for Empire Corridor, Metro-North commuter rail, and stations, based on actual usage, and Appendix B: Ridership and Revenue Forecasting provides details on forecasting. Ridership and revenue performance have been important considerations in selecting the Preferred Alternative.
Commenter	Russell, Gary
Comment I-686-2	Is there -- is there, like, a study of percentage of the cars have to be full, cost analysis to break even on, you know, operation, maintenance? Is there something out there we can read about that? I mean, do they have these 25 percent full to make money or is the tax payer going to, you know, be subsidizing that money. That -- that was my question.
Response	Thanks you for your comments. Ridership and revenue projections and subsidies are addressed in the Tier 1 EIS (Chapter 6 and Appendix B-Ridership and Revenue Forecasting). The cost analysis, performed for the Tier 1 EIS, considers operating and maintenance costs of the various alternatives. When used in conjunction with projected ridership, the subsidy or surplus per rider can be calculated. All alternatives are projected to have an operating subsidy during the planning horizon. Alternative 90B was selected as the Preferred Alternative, as it would add 370 miles of tracks and would constrain more of the additional trackage to the existing right-of-way than Alternatives 110 and 125. Although Alternative 110 has the lowest subsidy, the subsidy for the Preferred Alternative (Alternative 90B) would be \$13 per rider, which would be lower than both Alternative 125's subsidy per rider of \$14 and the Base Alternative's subsidy per rider of \$17 per rider. Alternative 90B's costs would also be less than that for Alternatives 110 and 125.
Commenter	Barren, Dan
Comment I-687-1	One thing that comes to mind is that the fastest plan for six-hour travel time, I can do that in my car right now. I don't really see the advantage of investing \$15 billion in something I can do right now driving from here to New York City.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Of the three Build Alternatives (90B, 110 mph and 125 mph) evaluated in the Tier 1 EIS, Alternative 90B would involve the lowest cost (less than half the cost of the most expensive alternative for 125 mph service), while providing the best overall on-time performance.
Commenter	Barren, Dan

Comment I-687-2	Another thing that I think should be a big consideration if we do go with the electric high speed rail is where is the energy coming from to power this rail. I hope that it is powered by some sort of combination of solar and wind power, something that's clean and renewable that takes a step forward. I think that three out of the four options are oil based. It's kind of ridiculous especially with electric cars starting to make a big comeback with Tesla and other car companies starting to pick electric cars as the future for transportation.
Response	Thank you for your comments regarding train propulsion methods in the High Speed Rail Empire Corridor Program. The Tier 1 EIS discusses the types of energy used for trains in Chapters 3 and 4. For Alternative 125, a dual mode diesel-electric locomotive was considered. Your suggestion to use electric power for operating the trains would be achieved by Alternative 125, which was dismissed from further consideration in the Tier 1 FEIS. The Preferred Alternative, Alternative 90B, was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance. Equipment selections and specifications will be further reviewed and determined as the program moves forward in Tier 2 assessments.
Commenter	Barren, Dan
Comment I-687-3	Another interesting thing just to kind of correlate to this is the paper just got released by Elon Musk. It's called the Hyperloop which is a kind of innovative high speed transportation concept that I think would be very interesting for the state to take a look at.
Response	Thank you for your comments. In reviewing the types of technologies to be used in providing the service, the focus was on using systems that would allow for connecting with the existing national and regional rail network on the Northeast Corridor. In developing the alternatives in the Tier 1 EIS for the High Speed Rail Empire Corridor Program, very high speed (VHS) alternatives were considered, but were not selected in part because they were considered to be cost-prohibitive. Comments from the public, relating to the different service alternatives, have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.
Commenter	Behr, Michael
Comment I-688-1	Speeds of 75 miles to 125 miles is not high speed anymore. 200 miles or 300 miles is out there. The trains in China, India, and South Africa are going faster than you are proposing. I do appreciate that you said "in steps," that you're -- there are further capabilities that will be enhanced to provide higher speeds.
Response	Thank you for your comments. During the selection of the alternatives for review in the Tier 1 EIS, alternatives with speeds of 160 mph and 220 mph were considered but not advanced. It was determined that the range of options advanced would be those with trains operating at 90, 110 and 125 miles per hour. It was also determined that operating trains at higher speeds would have greater impact on the environment, require more financial investment to construct and require more public resources to operate. Comments from the public, relating to the different service alternatives, have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.
Commenter	Behr, Michael
Comment I-688-2	The other thing in terms of this incremental process might be considered the -- an overhead electric rail so that, instead of using the polluting diesel electric engines, you could use all electric.
Response	Thank you for your comment. Your suggestion to use electric power for operating the trains would be achieved by Alternative 125, which was dismissed from further consideration in the Tier 1 FEIS. The Preferred Alternative, Alternative 90B, was selected over Alternative

125, based on its substantially lower costs, impacts, and its performance. Chapter 3 of the Tier 1 EIS discusses the types of power used in each of the alternatives considered. Equipment selections and specifications will be further reviewed and determined as the program moves forward in Tier 2 assessments.

Commenter Behr, Michael

Comment I-688-3 You mentioned the right of way, that CSX owns it, but Conrail still has priority. If it is not a separate dedicated rail, two things, Conrail has priority over passenger -- Amtrak, that's number one, and, number two, Conrail, with its heavy loads, demolish the road beds.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program. The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. Alternative 90B would also result in the best overall on-time performance for Amtrak service in 2035 of all of the alternatives considered. These improvements that will reduce congestion, delays and interference between passenger and freight trains will improve safety.

Commenter Behr, Michael

Comment I-688-4 This is an intrastate train. As such, will the DOT maintain the engines as it does in interstate trains.

Response Thank you for the question of train maintenance. Maintenance plans and programs will be further developed as the Preferred Alternative advances in Tier 2 assessments.

Commenter Berger, Richard G.

Comment I-689-1 Having a 125 mile per hour high speed rail is already twenty years from now which is when it's going to be fully implemented is far behind the rest of the world in this type of high speed brand. There is no reason for planning for the past. We should be planning for the future and much higher speeds and a much quicker time. Basically 450 miles between -- on the entire corridor, from New York to Buffalo, and they have that done in six hours in 2035 is ridiculous. That should be a four-hour trip. There is no reason why this should be taking that long. We're having inefficient transportation.

Response Thank you for your comments on the High Speed Empire Corridor Program. During the selection of the alternatives for review in the Tier 1 EIS, alternatives with speeds of 160 mph and 220 mph were considered but not advanced. It was determined that the range of options advanced would be those with trains operating at 90, 110 and 125 miles per hour. It was also determined that operating trains at higher speeds would have greater impact on the environment, require more financial investment to construct and require more public resources to operate. Comments from the public relating to the different service alternatives have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative.

Commenter Berger, Richard G.

Comment I-689-2 The one thing I was pleased to see is that you thought even with putting in the dedicated rails for high speed rails only that is a complete lie for only \$14 billion. That's a highly reasonable, as a matter of fact I think, low risk of what it would cost the high speed rail. For instance, one building, new apartment building in New York City has a value of two billion dollars. Here we're making a twenty-year investment for only \$14 billion. By comparison, you can look at what the United States is spending hundreds of billions of dollars each year to support automobile and truck traffic all across the United States.

Response	Thank you for your comments. Economic costs and benefits of each alternative have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B, the Preferred Alternative, would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would double the frequency of service on Empire Corridor West. Alternative 90B would also involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. Chapters 5 and 6 of the Tier 1 EIS describe the costs and benefits of the program alternatives.
Commenter	Berger, Richard G.
Comment I-689-3	We need to have better, faster rail transportation to connect this country and all parts of it, not just New York and Buffalo and go up to Toronto and from Buffalo to Cleveland, Detroit, Chicago.
Response	Currently, the scope of the Tier 1 EIS focuses on the Empire Corridor from New York City to Niagara Falls, New York, and passenger forecasts conservatively exclude trips that may have one trip end in Toronto or other locations beyond the Empire Corridor. Amtrak regional lines, such as the Maple Leaf and Lake Shore Limited, that traverse the Empire Corridor provide access and connections to the Toronto, Cleveland, and Chicago. Improvements to Empire Corridor service will improve service on these regional lines. Access to Detroit is available through other regional lines. Comments from the public, relating to support of the High Speed Rail Empire Corridor Program, have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.
Commenter	Myers, Tom
Comment I-690-1	I'm a parent here in Rochester and I have a daughter that goes to college in Boston. It's eleven hours by train when it works. There's been times that she's tried to get back and we just couldn't really come up with other ways. And it's twelve/fourteen hours because of a delay around the Albany area. It's just terrible what happens there. So it's not a reliable way for us. I drive to Boston often now to drive my daughter back, partially because it's nice talking to her in the car, but it's a six-hour drive, six-and-a-half-hour drive, for an eleven-hour train. It's just not acceptable.
Response	Thank you for your comments about the need for higher train speeds in the implementation of a high speed rail corridor in New York State. Currently, the High Speed Rail Empire Corridor Program is focused on improvements between New York City and Niagara Falls. Amtrak service to Boston is provided via the Lake Shore Limited Line. The Preferred Alternative will improve service along the Empire Corridor, and improvements to Empire Service will benefit travel on connecting regional lines, including connecting trains to Boston (Adirondack Line). Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight traffic and will reduce travel times between New York City and Niagara Falls by 1 ½ hours in 2035, compared to the Base Alternative.
Commenter	Myers, Tom
Comment I-690-2	A hundred and twenty-five miles is certainly in the right direction, but we need much faster than that eventually also just to make it viable.
Response	Thank you for your comment concerning train technologies considered in the High Speed Rail Empire Corridor Program. During the selection of the alternatives for review in the Tier 1 EIS, alternatives with speeds of 160 mph and 220 mph were considered but not advanced. It was determined that the focus would be on a range of options with trains operating at 90, 110 and 125 miles per hour. It was determined that operating trains at higher speeds would have greater impact on the environment, require more financial investment to

construct and require more public resources to operate. In selecting Alternative 90B as the Preferred Alternative for the High Speed Rail Empire Corridor Program, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts. The Preferred Alternative, Alternative 90B, was selected over Alternatives 110 and 125, based on its substantially lower costs, impacts, and its performance. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter Catalli, Joseph

Comment I-691-1 I would like to have the 125 also. And, as far as going to Canada, I've got relatives up there and I took the train a couple times last year and I enjoyed it; but, again, it's an hour and a half inspection at the border. But then you make up the time from Niagara Falls, Canada to Toronto.

Response Comments from the public, relating to support of Alternative 125, have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. The Niagara Falls Station Intermodal Transportation Center, which was reconstructed as part of a separate project, was designed to improve the border crossing process.

Commenter Cates, David

Comment I-692-1 I was discussing the corridor and the 125 high speed sounds good except we all know it's going to be trouble when you're taking someone's land.

Response Thank you for your comments in support of Alternative 125 and the High Speed Rail Empire Corridor Program. Your observation notes the need for land acquisitions to build the 125 Alternative. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).

Commenter Cates, David

Comment I-692-2 the question came down to being how does it interact with the regional lines and which regional system are they going to have? Are they going to do the basic? Are they going to do 90A/B, whichever? Which one was going to be there to catch you because hypothetically was, okay, I am taking the high speed to Syracuse and waiting for regional training to go back to Schenectady, how long of a wait do I have? Would it be better just to take the regional with it running consistent enough it's a half-hour wait or will it be a two-hour wait?

Response Thank you for your comments. The Preferred Alternative, Alternative 90B, would provide rail service that would operate with more frequent and faster service to Syracuse and Schenectady and other destinations currently served by the Empire Corridor. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 of all of the alternatives considered. Operating schedules and the implementation of service initiatives have been investigated in the development of the Service Development Plan. Individual projects that are part of the program will undergo a second evaluation (Tier 2) to further advance the designs. Schedules and frequencies between stations would be further refined in the Tier 2 evaluations.

Commenter Cates, David

Comment I-692-3	That's the main thing, the trains are sharing the tracks with the freight is the biggest problem right now.
Response	Your comments on the High Speed Rail Empire Corridor Program have been considered in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight traffic and would involve the least delay-minutes per 100 train miles operated for freight trains of the alternatives considered. Improvement of passenger rail service while maintaining freight operations along the Empire Corridor is one of the major goals for the High Speed Rail Empire Corridor Program.
Commenter	Cates, David
Comment I-692-4	I am leaning towards the 110 now more than anything else just because I think the end result would be nice.
Response	Thank you for your comment in support of the Alternative 110 and the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property. Because of the required property acquisitions, Alternative 110 would have significantly higher costs and greater potential for environmental impacts than Alternative 90B, while only achieving a modest improvement in overall performance. Alternative 90B provides similar trackage as Alternative 110, only situating more of the improvements within the existing right-of-way.
Commenter	Chelbach, Sue
Comment I-693-1	The rest of the world is way ahead economically from a tourist perspective, just everything. I don't think it's enough to do 125.
Response	Your comments on the High Speed Rail Empire Corridor Program have been considered by the FRA and NYSDOT in selecting Alternative 90B as the Preferred Alternative. During the selection of the alternatives for review in the Tier 1 EIS, alternatives with speeds of 160 mph and 220 mph were considered but not advanced. It was determined that the focus would be on a range of options with trains operating at 90, 110 and 125 miles per hour. It was determined that operating trains at higher speeds would have greater impact on the environment, require more financial investment to construct and require more public resources to operate. The Preferred Alternative, Alternative 90B, was selected over Alternatives 110 and 125, based on its substantially lower costs, impacts, and its performance. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Tsotsky, Richard
Comment I-694-1	A while ago, I was going some research on a corridor between Toronto and Detroit, and it just seemed that there was much more population or something like that in excess of ten million along that corridor. And thinking as of Buffalo and what would help Buffalo, it seems to me at the time that connecting with those cities with Cleveland, with Toledo, with Detroit, down to Chicago in connection with the, I think it was called the American 2020 plan or Ohio rail plan which also called for extending to Buffalo and opening up the Dunkirk station as well which is between Buffalo and Erie is longer -- it's the longest stretch without a station even longer through Albany to Utica I believe. It just seems as though for Buffalo and Niagara Falls connecting Toronto with Detroit makes much more sense

Response Thank you for your questions regarding the expansion of connections to the Empire Corridor beyond Buffalo and Niagara Falls. Currently, the scope of the Tier 1 EIS focuses on the Empire Corridor from New York City to Niagara Falls. New York and passenger forecasts conservatively exclude trips that may have one trip end in Toronto or other locations beyond the Empire Corridor. Amtrak regional lines, such as the Maple Leaf and Lake Shore Limited, that traverse the Empire Corridor provide access and connections to the Toronto, Cleveland, and Chicago. Improvements to Empire Corridor service will improve service on these regional lines. Access to Detroit is available through other regional lines. The Tier 1 EIS is a corridor level evaluation that considers use of the existing stations only. Extending trains beyond the current study area could possibly be studied in partnership with other states.

Commenter **Tsotsky, Richard**

Comment I beg you that Mr. Chan sent me, two-inch binder, and the southern tier group going from I-694-2 Buffalo, you know, down to the southern tier of New York State to New York City would seem to be better for Buffalo, to connect us directly, forget the other upstate cities, but again it requires buy-in from political leaders, citizens, other groups,

Response Thank you for your comment on the HSR Empire Corridor Program. Currently, the scope of the Tier 1 EIS focuses on the Empire Corridor from New York City to Niagara Falls. The route mentioned (Pocono Corridor) is approximately 80 miles south of the Empire Corridor and does not service the same cities as the Empire Corridor. Additional routes out of this corridor are not being considered at this time as part of the program.

Commenter **Tsotsky, Richard**

Comment my preliminary research indicated and riding the rails indicated that there were a number of stations that weren't in downtowns, that were in urban hubs. I thought the whole I-694-3 rational for high speed rail is to get office workers and people looking for entertainment from downtown to downtown.
You go from Buffalo to Rochester. That is close. That's very close to downtown. You go to Syracuse, that's what two and half miles out from downtown. Utica on the other hand is downtown, and then you're not going to ever get to downtown Albany on the train. I mean to the capital of New York State that we're trying to connect with everything else, you have to get off at Schenectady or Rensselaer.
I don't know what thought was put into rerouting or getting these tracks closer to the urban corridor so we can have smart growth so we can create urban -- I mean transit-oriented element and density and all of those other principles that should go hand in hand with the siding of the train house -- or I mean the rail house.

Response Thank you for your comment regarding the location of stations on the Empire Corridor. The Tier 1 EIS for the High Speed Rail Empire Corridor Program evaluates a range of corridor-level service improvements for intercity passenger rail with the purpose of making decisions on system wide level service, including service reliability, frequency, and train speeds. The focus was on using existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. At Rochester, the existing station was reconstructed by NYSDOT in partnership with FRA, Amtrak, and the City of Rochester. In Syracuse, a new station was built, that provides intermodal connections with other bus companies, and CENTRO, the local transit provider. Utica's train station has been extensively restored in partnership with Oneida County, and recently had an additional platform constructed on the westbound side that also provides connections with the Adirondack Scenic Railroad. In Albany-Rensselaer, a new station was constructed, adjacent to the Amtrak support facilities, by the Capital District Transportation Authority that could provide ample parking for passengers, expedite train movements, and allow for retirement of some redundant operating infrastructure. Station planning at these various station sites

along Empire Corridor considered and incorporated, to the extent possible, access to downtown areas (i.e., reconstruction of Buffalo-Exchange Street was selected over other more distal locations considered) and incorporated adequate parking and intermodal access.

Commenter Tsotsky, Richard

Comment I-694-4 I understand that you can't eliminate Depew or Buffalo. You have to have both downtown Buffalo because, one, you can go west. You can go west from Depew but you can not go west from downtown Buffalo the way the tracks are currently configured, but I understand that the Central Terminal if I am not mistaken you can go in both directions north through Toronto and west.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. Improvement to the passenger rail facilities in the City of Buffalo area is an important goal of the High Speed Rail Empire Corridor Program. NYSDOT has implemented upgrades at the existing rail station at Buffalo-Depew to improve/rehabilitate the parking lot and enhance passenger access to comply with Americans with Disabilities Act requirements. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.

Commenter Cupoli, Edward

Comment I-695-1 My name is Ed Cupoli. I'm a resident of the Town of Guiderland. I worked for the State Legislature back in the '80s for a long time and in 1984 I was asked by then Assemblyman Bill White from Buffalo to go to a hearing in the building, the Mahoney Building, and it was on this question of high speed rail and I didn't know anything about it. I was supposed to be one of these guys that can figure things out.
My thinking is you should think in your plan about the future, not the past.
Because, I'm an economist. So do an analysis of the competitive advantages of each of those proposals on Buffalo, Rochester, Syracuse, and get some really good sense, or New York City.
What is the sustainability of these cities in the way we've known them with this kind of rail, versus the other kinds of transportation.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program. Economic costs and benefits of each alternative for the program have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight traffic and will reduce travel times between New York City and Niagara Falls by 1 ½ hours in 2035, compared to the Base Alternative.

Commenter Stone, Jeff

Comment I-696-1 I am looking at the plans of the Buffalo area of the basic model that's already being done no matter what happens, and I don't see anything happening with like the Buffalo stations and

the Depew stations. I mean to me it seems like the high speed is coming right into Buffalo and it ends at the Depew station, to me it seems like there should be something more there than just that little tiny station.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the stations in Buffalo, New York. Improvement to the passenger rail facilities in the City of Buffalo area is an important goal of the High Speed Rail Empire Corridor Program. NYSDOT has implemented upgrades at the existing rail station at Buffalo-Depew to improve/rehabilitate the parking lot and enhance passenger access to comply with Americans with Disabilities Act requirements. The High Speed Rail Empire Corridor Tier 1 EIS evaluates a range of improvements for the purpose of making decisions on corridor-level service. The focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-694-4.

Commenter Stone, Jeff

Comment I-696-2 I mean they're building nice stations at all of the other ones and figuring stuff out for them, I think that this is the other end of the crown over here. This is the jewel on the other end of the line, and it should show that. What they're doing there, what's there now, doesn't show that.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative.

Commenter Stone, Jeff

Comment I-696-3 I also think that they should take into consideration in between Buffalo and Niagara Falls and the Tonawanda area since the Buffalo/Niagara Falls section is never going to be high speed it would be a good idea to possibly think about putting a station somewhere in Tonawanda because I think that it would definitely get a lot of use.

Response Thank you for your comment regarding the location of stations on the Empire Corridor. The Tier 1 EIS considers using the existing stations in each of the alternatives at this time. Trip time reductions for the Build Alternatives as discussed in the Tier 1 EIS were based on the trains operating non-stop between the Buffalo-Exchange Street Station and the Niagara Falls Station, without any intermediate stations in the Tonawanda area, which is roughly midway in between. Tonawanda is considered to be driving distance (roughly 13 to 15 miles) from these stations, and adding a stop would increase travel times for other travelers.

Commenter Stone, Jeff

Comment I-696-4 My other thing is I think if this thing is ever built, the higher speed stuff, it needs to be completely separate from freight. That's what I got. That's really what I got. It's never going to work without it being separate from freight lines. There is no way to ever make it safe and fast enough without separating it completely. No matter what option that it is. That's what I got.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program. Improvement of passenger rail service while maintaining safe and efficient freight operations along the Empire Corridor is one of the major goals for the High Speed Rail Empire Corridor Program. The importance of preserving and improving freight rail traffic to the economy of New York State has been a critical factor in the selection of the Preferred Alternative.

The Preferred Alternative, Alternative 90B, will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail and will involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.

Commenter **Doff, Frank C.**

Comment
I-697-1 I have been recently appointed director of board member of J. Park, Inc., which is a transportation organization. But in order for us to move ahead, surpass what's happening in Europe, we should come up with a more revolutionary concept in high speed rail. For example, so that U.S. will be ahead of the rest of the world. And we have a technology here right now, and I want to pass on some information. What is available in technology is available today in U.S. organizations. Because right now ET3 is setting up a pilot—a demonstration unit at Meadowlands, together with J. Parks. J. Parks is overhanging personal rapid transit, okay. That's nothing new. It is something that comes up with the energy crisis. It was put up at the college campus of West Virginia. So, since '93, that system has been in operation, and it has no fatality, or no injury on the over hundred something passengers.

Response Thank you for your comment in support of the High Speed Rail Empire Corridor, which have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. In reviewing the types of technologies to be used in providing the service, the focus was on using systems that would allow for connecting with the existing national and regional rail network on the Northeast Corridor.

Commenter **Ebina, Alexander**

Comment
I-698-1 And as a member of the Millennial generation, we Millennial recognize the importance of rail transportation. Many of my friends from college take the train.

Response Thank you for your comments supporting the High Speed Rail Empire Corridor Program the High Speed Rail Empire Corridor Program and for the need for improving rail passenger service on the route. Comments from the public have been considered in the selection by the FRA and NYSDOT of the Preferred Alternative, which will improve reliability, travel times, and frequency of train service..

Commenter **Ebina, Alexander**

Comment
I-698-2 I also endorse the Empire State Passenger Association's 110 option because it does offer the best of all worlds.

Response Thank you for your comment supporting the 110 Alternative, which has been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternatives 90B and 110 would restore large sections of third and fourth track, but Alternative 90B would constrain more of the additional trackage to the existing right-of-way, substantially reducing costs and impacts. For reasons of safety, CSXT, the owner of the right-of-way, requires a 30-foot track separation between freight and passenger tracks when passenger trains operate at 110 mph. In many places on the route, this is only possible by acquiring significant additional property.

Commenter **Ebina, Alexander**

Comment
I-698-3 Right now, the limitations you have is only giving you four trains a day doesn't give you a lot of travel flexibility.

Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would double the frequency of service on Empire Corridor West. Chapter 3 and Exhibit 6-9 of the Tier 1 EIS describe the increase in service proposed by the Preferred Alternative.
Commenter	Elias, Byron
Comment I-699-1	I think keeping the train separate would be good for everyone when you do have that occasional train derailment. Then you would have the additional tracks for both CSX and freight and for the passengers, to continue moving people with a very high percentage amount of service.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight rail. Alternative 90B would restore large sections of third and fourth track and would constrain more of the additional trackage to the existing right-of-way, substantially reducing costs and impacts. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Ellis, Tom
Comment I-700-1	I endorse the comments that Dominick Calsolaro said about the Livingston Avenue Bridge.
Response	Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge .
Commenter	Ellis, Tom
Comment I-700-2	One is, I think we need more rail stations. Two concerns the frequency of travel and the third issue is safety issues. I'd like to see stations constructed in downtown Amsterdam and in Fonda and in Little Falls that could be used.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. The Tier 1 EIS is a corridor level evaluation that only considers use of the existing stations. Alignments and rights of way for each of the different alternatives do not include new stations. Additional stations could be addressed in future studies. Chapters 2 and 3 address safety for the existing corridor and the program alternatives.
Commenter	Ellis, Tom
Comment I-700-3	As far as frequency, I would like to see trains between Albany and Buffalo running at least eight times a day, and I'd like to see more frequent rail travel on weekends.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program, which will improve intercity rail passenger service in New York State through infrastructure investments and operational improvements. The Preferred Alternative, Alternative 90B, would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would double the frequency of service on Empire Corridor West.

Commenter	Ellis, Tom
Comment I-700-4	I think that in the United States we need to establish a much higher level of safety in the rail industry overall. We need to raise it to the level, if possible, to the safety level that we have in the air industry.
Response	Thank you for your comments on the importance of safety being a part of the High Speed Rail Empire Corridor Program. The Preferred Alternative, Alternative 90B, will add additional trackage, the majority of which (over 280 miles) will consist of third dedicated track. This will better segregate passenger and freight rail, which will allow improvements in both rail safety and travel speeds. Chapters 2 and 3 address safety for the existing corridor and the program alternatives. The Tier 1 FEIS accounts for several types of fencing and warning systems, including installation of perimeter fencing on both sides of the right-of-way on portions of the right-of-way to prevent trespassing. The Tier 1 FEIS addresses fencing and other safety features for the Preferred Alternative in Section 3.3.3, under the "Safety" section.
Commenter	Olejniczak, Hank
Comment I-701-1	I am here mainly because I am promoting along with the high speed rail improvements, which I think we need, the concept of using the Central Terminal as the train stop in Buffalo. money is being spent in Niagara Falls over \$50 million to give them a train station. Rochester just got \$23 million. Schenectady is getting money. Syracuse is getting money. Albany had money to build their station. if that building isn't used in the next couple of years, it's going to be something that the city and the county is going to be stuck with it. It's going to be costing them over 20 million minimum to knock that building down if the group walks away from it because it's getting to that point right now. This would be a catalyst for the East Side development, and it would be a horrible shame to see that building end up being torn down as opposed to spending the money on it to fix it up and keep it as a useful part of the community.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. Improvement to the passenger rail facilities in the City of Buffalo area is an important goal of the High Speed Rail Empire Corridor Program. NYSDOT has implemented upgrades at the existing rail station at Buffalo-Depew to improve/rehabilitate the parking lot and enhance passenger access to comply with Americans with Disabilities Act requirements. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.
Commenter	Olejniczak, Hank
Comment I-701-2	We only have one pick at the can. Whatever we build is going to be something we're going to be stuck with for the next 100 years. There is not going to be someone saying in 2035 let's upgrade that track to something else.

Response	Thank you for your comments on the Tier 1 EIS. In selecting Alternative 90B as the Preferred Alternative for the High Speed Rail Empire Corridor Program, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts. Alternative 90B will provide approximately 370 miles of additional trackage to better segregate passenger and freight traffic and will reduce travel times between New York City and Niagara Falls by 1½ hours in 2035, compared to the Base Alternative. Alternative 90B, the Preferred Alternative, would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would double the frequency of service on Empire Corridor West. Alternative 90B would also involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. Descriptions of the alternatives considered and comparisons of benefits, costs, and environmental and social impacts can be found in Chapters 3 and 6 of the Tier 1 EIS.
Commenter	Olejniczak, Hank
Comment I-701-3	If you have trains that were reliable and could do it in less than six hours or six hours, you're going to see no one taking airplanes in to New York which is what they want because there is enough people traveling farther around the country than we have right now.
Response	Thank you for your comments supporting the High Speed Rail Empire Corridor Program and the need for improving rail passenger service on the route. Alternative 90B will reduce travel times between New York City and Niagara Falls by 1½ hours and would increase ridership by 1 million in 2035 over the Base Alternative.
Commenter	Olejniczak, Hank
Comment I-701-4	Another thing that really, really bothers me is all the stations that I stop in from New York to Philadelphia, Buffalo is the only place in the state that has not seen any money expended on their train station.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the need for station improvements in Buffalo, New York. Improvement to the passenger rail facilities in the City of Buffalo, including a new station development at Buffalo-Exchange Street and updates at the Buffalo-Depew Station, are discussed in the response to Comment I-701-1.
Commenter	Giles, Elizabeth
Comment I-702-1	I am first of all in favor of I believe it's Alternative 125, the highest speed possible. It would have been better to have even higher speeds, but that's what is in the offing so we will try and go with that if that's all the choice we have. I believe that we should move towards rail replacing air travel, particularly on the shorter distances like between here and New York, here and Boston, here in Chicago. Locally, I would see the benefit as being, you know, the higher speeds we have, the tighter the connection between the New York City area and Upstate so that a lot of businesses who are finding it maybe a little on the expensive side to do business down there would think that relocating in Syracuse, Rochester, Buffalo would be more feasible if it were almost like a suburban commute instead of as long a distance as it seems right now.
Response	Thank you for your comment supporting the 125 Alternative and the benefits from high speed rail. In selecting Alternative 90B as the Preferred Alternative for the High Speed Rail Empire Corridor Program, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts. Alternative 90B would also shorten the trip from New York City to Niagara Falls by 1½ hours. Alternative 125 was dismissed, based on greater impacts (to 2,000 to 3,000 acres of land) and higher costs (more than double the costs for the Preferred Alternative).

A substantial drawback of Alternative 125 is that it would take the longest time to construct and would be the costliest alternative. One of the drawbacks of Alternative 125 is that express service would not be directly provided to Niagara Falls, Rome, Utica, Amsterdam, and Schenectady.

Commenter Giles, Elizabeth

Comment I-702-2 I think it's crucial to revive Central Terminal as part of any of these plans that would go through. I would be for closing the Exchange Street Station and of course closing the Depew Station and then serving preferably by light rail but however it can be done to get a local rail going between downtown and the airport by way of Larkinville, the Central Terminal, Walden Galleria Mall, thruway mall, airport.

It would help to save one of our great historic relics, get it relevant again and seen, and I would think in the long run it would be a lot less costly to revive the Central Terminal as a premiere train station than to start building a multimillion dollar multimillion transit center from scratch somewhere else. Central Terminal was located where it was for a reason. It's not downtown because trains going to Chicago I guess would have to kind of back up from downtown, and it added an hour onto the trip.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment I-701-1.

Commenter Giles, Elizabeth

Comment I-702-3 I do believe that Central Terminal would be a perfectly viable passenger station for Buffalo provided that it is served by local rapid transit between downtown and the airport preferably light rail but I believe the NFTA is looking at bus rapid transit along existing publicly owned rights of way that would -- I believe some one was telling me earlier like 125 plan will maybe necessitate a new station located between somewhere between Exchange Street and Depew, and that's the terminal right there.

Response Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Alternative 125, which would have required a new or relocated Buffalo station location, has been dismissed from further consideration. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station, for the reasons described in the response to Comment 701-1.

Commenter Glass, Bradley

Comment I-703-1 regarding the restoration of a pedestrian connection on the Livingston Avenue Bridge. I think this is something that should be greatly considered.

Response Thank you for your comment regarding pedestrian access on the Livingston Avenue Bridge between Albany and Rensselaer, New York. The Livingston Avenue Bridge Project (and associated EA) is along the same corridor and is considered a component of the program for Tier 1 assessments, but is being designed and implemented as a separate project. The Livingston Avenue Bridge Project has independent utility due to its physical condition. For more information on the Livingston Avenue Bridge, please visit the LAB project website www.dot.ny.gov/livingstonavebridge.

Commenter Greenburg, Richard

Comment I-704-1	I hate to see this, but I am probably standing up here as a conspiracy theorist. I looked at these plans, all of the plans, as being only marginally better than what we have today. They're really not going to change transportation in New York State or any place else.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. As noted in the Tier 1 FEIS, Alternative 90B would double the service frequency along Empire Corridor West. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 of all of the alternatives considered and would increase ridership by 1 million over the Base Alternative.
Commenter	Greenburg, Richard
Comment I-704-2	There is one thing that's missing I believe is the link between Buffalo and New York City and the link between Erie and Lackawanna. It's still there. It's sitting there largely abandoned.
Response	Thank you for your comments and interest in the High Speed Rail Empire Corridor Program. The HSR Empire Corridor Program connects New York City with the largest cities in New York State. The Empire Corridor is identified with the rail route that extends from New York City to Albany through the Hudson Valley, and then west from Albany-Rensselaer to Niagara Falls, through Mohawk Valley and across Central and Western regions of New York City. Use of the Erie and Lackawanna abandoned right of ways would not follow the areas outlined in the program.
Commenter	Haremza, Jason
Comment I-705-1	I'm in support of Option 125. fourteen billion dollars sounds like a lot, but how many billions are we spending on the Tappan Zee Bridge Replacement which is the replacement of a single bridge?
Response	Thank you for your comments in support of Alternative 125, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 would create a dedicated, 2-track passenger right-of-way over much of the Empire Corridor. Alternative 90B would restore large sections of third and fourth track, but would constrain more of the additional trackage to the existing right-of-way, substantially reducing costs and impacts. Based on this, and resulting lower costs and impacts, Alternative 90B has been selected as the Preferred Alternative. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered.
Commenter	Haremza, Jason
Comment I-705-2	Option 125 effectively makes Buffalo and Syracuse commutable and expands the job market to combine metropolitan areas of three million people or more.
Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program. Although Alternative 125 would improve service to Buffalo-Exchange Street and Syracuse, the 125 express service would bypass existing stations at Schenectady, Amsterdam, Rome, Utica, and Buffalo-Depew. The Preferred Alternative, Alternative 90B, will improve service to these existing stations.
Commenter	Haremza, Jason
Comment I-705-3	Connections to Canada are good and necessary, but I feel usage is limited until a more effective border crossing process is made. It doesn't matter how fast the train goes if you sit at the border for two hours while customs does its work.

Response	Thank you for your comments on the border crossing process. Currently, the High Speed Rail Empire Corridor Program focuses on improvements between New York City and Niagara Falls. The newly reconstructed Niagara Falls Station Intermodal Transportation Center was designed to improve the border crossing process.
Commenter	Haremza, Jason
Comment I-705-4	I know this hearing is about High Speed Rail, but it cannot be divorced from the Rochester Station Project. I would respectfully ask NYSDOT to update the website in regards to the project time line and schedule a public meeting specific to the Station Project to address some of the issues that have been raised by other speakers tonight.
Response	Thank you for your comments regarding the Rochester Station Project. NYSDOT and the City of Rochester are supporting a project to build a new station at Rochester, with the construction completed in 2017. Further information is available at: www.dot.ny.gov/rochesterintermodalcenter .
Commenter	Hellwitz, Bob
Comment I-706-1	I am in favor of the 125 plan because there is a dedicated line. Also in Western New York we have a beautiful train station on the East Side of Buffalo, and I would like that be incorporated into these plans. It would be development for East Side of Buffalo and bring jobs, and it would be a benefit to the East Side.
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program and the use of the former Central Terminal in Buffalo, New York. Buffalo Central Terminal was not included in the analysis of the Build Alternatives in the Tier 1 EIS, since the focus was on utilizing existing stations along the Empire Corridor, including the stations at Buffalo-Depew and Buffalo-Exchange Street. The building is on the north side of the main tracks at the west end of CSX Transportation's Frontier Yard and is not easily accessible for passenger trains. Alternative 125, which would have required a new or relocated Buffalo station location, has been dismissed from further consideration. In the spring of 2017, the Governor and Mayor formed and participated in a Train Station Site Selection Committee, that also included elected, state, county, city officials, Amtrak, and other public and private transportation officials. The committee, tasked with evaluating prospective locations for a Buffalo Amtrak/bus station, including Central Terminal, voted to approve a downtown station site closer to the existing Buffalo-Exchange Street Station. Some of the primary reasons for the selection of the downtown site included economic benefits to the downtown business district, as well as population densities that support the transit use. Construction of a new terminal at the Buffalo-Exchange Street Station site finished in November 2020.
Commenter	Hubiak, Joe
Comment I-707-1	We have land, farmland on the other side of the railroad tracks and I know there's farmers all the way from Albany to Buffalo that have land on the other side of the railroad tracks and that's what we're here for, to know if our access to our land is still going to be -- is going to be accessible.
Response	Thank you for commenting on the High Speed Rail Empire Corridor Program. Alternative 90B would provide 370 miles of additional trackage and would minimize possible impacts on farmlands by the location of tracks primarily within the existing right-of-way, as discussed in Section 4.18. Section 4.18 of the Tier 1 EIS describes the general impacts of the program alternatives on farmlands, potential mitigation, and further analysis to be conducted in Tier 2 studies. Potential mitigation measures for work affecting agricultural properties could include installation of crossings for farm animals or creation of new temporary farmland access roads, if the proposed work may impinge on these uses. In Tier 2, the mapping of the railroad alignments will be further refined and access across the right

of way will be reviewed with measures identified to provide for the safe movements of trains at grade crossings.

Comments from the public, discussing the safety of the operation of the high speed trains for both grade crossings and along the right of way, have been an important consideration in the selection of the Preferred Alternative by FRA and NYSDOT.

Commenter **Thomas, Colin Fox**

Comment I'm right now supporting the 125 plan
I-708-1

Response Thank you for your comment supporting the 125 Alternative and the benefits from high speed rail. The Preferred Alternative, Alternative 90B, was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance. Alternative 90B would result in the best overall on-time performance for Amtrak service in 2035 and, at the same time, would involve the least delay-minutes per 100 train miles operated for freight trains of all of the alternatives considered. Unlike the 125 express service, which would bypass existing stations at Schenectady, Amsterdam, Rome, Utica, and Buffalo-Depew, it will improve service to these existing stations.

Commenter **Thomas, Colin Fox**

Comment I like how there's more intermodal transport centers in locations. I hope that can be expanded somehow to all the locations, and as well as to make sure they are accessible to the downtowns
I-708-2

Response Thank you for your comments on the High Speed Rail Empire Corridor Program. The Tier 1 EIS evaluates a range of corridor-level service improvements for the purpose of making decisions on corridor-level service, including service reliability, service frequency, and train speeds. The focus was on utilizing existing stations along the Empire Corridor. A number of stations along the route that are accessible to downtown urban centers (including Niagara Falls, Buffalo-Exchange Street Station, Rochester, and Syracuse) have been reconstructed in recent years.

Commenter **Thomas, Colin Fox**

Comment And I just support the idea of increasing ridership on rail to help reduce the amount of drivers on the road, which saves on transportation costs, wear and tear on our roads and highways, as well as reduces pollution and greenhouse gas emissions and pollution.
I-708-3

Response Thank you for your comments, your environmental and economic concerns have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Ridership and revenue opportunities have been an important consideration in selecting the Preferred Alternative. The net annual operational benefits for the Preferred Alternative would be roughly equivalent to eliminating the emissions associated with the energy and electricity consumption of 2,500 to 4,200 average U.S. single family homes every year.

Commenter **Lepine, Maurice**

Comment I'm also a teacher at Baldwinsville Central District, teaching technologic education. However, I support the 110 and the 125. Being a person who works with young people, I think that if we want to keep best and brightest in this area, in Central New York, whether you're at Buffalo or anywhere along the corridor, you want to have transportation where they can go to school and come back, go to their jobs come back home and stay home to their business and bring -- and bring the monies in.
I-709-1

Response	Thank you for your comments in support of Alternatives 110 and 125 and the program. Economic costs and benefits of each alternative, for the High Speed Rail Empire Corridor Program, have been considered by FRA and NYSDOT in the selection of the Preferred Alternative. Alternative 90B was selected as the Preferred Alternative, as it would add 370 miles of tracks and would constrain more of the additional trackage to the existing right-of-way than Alternatives 110 and 125. Chapters 5 and 6 of the Tier 1 EIS describe the costs and benefits of the program alternatives.
Commenter	Lepine, Maurice
Comment I-709-2	However, I support the 110 and the 125.
Response	Thank you for your comments in support of Alternative 110 and 125, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 would create a dedicated, 2-track passenger right-of-way over much of the Empire Corridor and was dismissed due to higher costs and impacts. Alternatives 90B and 110 would restore large sections of third and fourth track, but Alternative 90B would constrain more of the additional trackage to the existing right-of-way, substantially reducing costs and impacts.
Commenter	Love, John C.
Comment I-710-1	The high speed rail corridor of New York State, I believe, ought to be upgraded to a 90 mile per hour, or 110 mile-per-hour corridor, at least.
Response	Thank you for comments supporting the High Speed Rail Empire Corridor Program and the need for improving rail passenger service on the route. In selecting Alternative 90B as the Preferred Alternative for the High Speed Rail Empire Corridor Program, the FRA and NYSDOT selected a program of improvements largely situated within the existing rights-of-way, thereby minimizing both costs and impacts.
Commenter	Love, John C.
Comment I-710-2	Just to give some statistics, Amtrak makes over 40 million dollars in operating revenue on its routes under 400 miles in length. Those are Amtrak's regional routes. Amtrak is not a money losing proposition. As one man put it, there are two systems within Amtrak. There is a regional system. There is a long distance system. The long distance system, we know, has had financial conundrums that have come against it. The regional system is profitable. And a higher speed for the regional trains, I think, is fully justifiable, especially in light of the fact that they are making a profit. According to the Brookings Institute, above 40 million dollars a year profit.
Response	Thank you for your comments regarding economic concerns, which have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Ridership and revenue opportunities have been an important consideration in selecting the Preferred Alternative. Chapters 5 and 6 of the Tier 1 EIS describe the costs and benefits of the program alternatives.
Commenter	Love, John C.
Comment I-710-3	Now, another fact, Norfolk Southern Railroad, Norfolk Southern Corporation, paid almost a billion dollars in taxes in one of the recent fiscal years, within the last five years. Should not revenue coming into our government from railways be used to improve railway infrastructure. Even for privately half freight hauling railroads, as we upgrade these to higher speeds, and dare I say high speed.
Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program. The program is supported by both the Federal Railroad Administration and the New York

	State Department of Transportation and would be subject to the funding requirements of both the federal and state governments.
Commenter	Maray, Carl, Licensed Professional Engineer, RL Banks, Licensed Professional Engineer, RL Banks
Comment I-711-1	<p>The other opportunities I've worked with is RL Banks in Washington. I represent them tonight and they work largely with FRA funding and service of transportation board issues in Washington.</p> <p>Getting back to the NEPA Process. One of the things we learned in Dallas on system quarters was to get a categorical exclusion. I would suggest breaking the program down into pieces. You already broke it down between Poughkeepsie and Albany which is smart, very smart on Joe Boardman's part and you folks on the DOT. I think you will need that to get through the CSX issues with the service transportation board.</p>
Response	Thank you for your comments on the High Speed Rail Empire Corridor Program. The Tier 1 EIS outlines a program of individual improvements to be further evaluated for implementation in Tier 2, as suggested in your comment. In the Tier 2 assessments, individual projects or groups of projects will be further advanced in terms of costs, scheduling, and funding, according to the Service Development Plan.
Commenter	Maray, Carl, Licensed Professional Engineer, RL Banks, Licensed Professional Engineer, RL Banks
Comment I-711-2	I would be in favor for the 125. I would like to see that with a stop in Utica. I think it was previously mentioned with partially the new partnership between The School of Health and Science in Albany and the school in Utica IT, SUNY IT. I think it would be a big plus to move scientists and engineers back and forth because they will be working together. I think the station stop in Utica, it seems you've got one in the Falls, but I think it's the gateway to the Adirondacks.
Response	Your comments about preserving and offering intercity rail passenger service for the City of Utica have been considered by the FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Alternative 125 was designed to help cut the distance between Albany and Syracuse by 14 miles, but one of the major drawbacks of this route is that it passes to the south of the stations on the current Empire Corridor in the Mohawk Valley between Syracuse and Albany. Therefore, 125 express service would not serve Rome, Utica, Amsterdam and Schenectady. Alternative 90B was selected over Alternative 125, based on its substantially lower costs, impacts, and its performance, and would increase service to Utica, as discussed in Chapter 3 of the Tier 1 EIS.
Commenter	Pyke, Gayle
Comment I-712-1	<p>And I was mostly here tonight to find out what the time table was for the new station in particular. I also represent retirees in the area and I do go to Albany to lobby for health care protection and so forth in the interest of seniors. I can't get the seniors that are local to use the train. So we have seventy and eighty-year-old people driving seventy miles an hour on the thruway, which really scares me.</p> <p>But let's get that new station. And I'm also interested what is meant by the High Speed Rail.</p>
Response	Thank you for your comments in support of the High Speed Rail Empire Corridor Program, which have been considered by FRA and NYSDOT in the selection of Alternative 90B as the Preferred Alternative. Chapter 3 of the Tier 1 EIS describes the improvements and operations proposed, and Section 2.5.5 presents a description of the status of station improvements along Empire Corridor.